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# Transportation Difficulty of Black and White Rural Older Adults

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## Abstract

The purpose of this study was to understand self-reported transportation difficulty among rural older adults. We used data from the UAB Study of Aging (255 Black and 259 White), community-dwelling participants residing in rural areas. We examined the relationship of predisposing characteristics, enabling resources, and measures of need for care with self-reports of transportation difficulty. Blacks reported having more transportation difficulty than Whites (24.7% vs. 11.6%; $p \leq .05$). When we introduced other variables, race differences disappeared, but there was a race by income interaction with transportation difficulty. Whites with lower incomes were more likely to have transportation difficulty than Whites with higher incomes. When data from Blacks and Whites were analyzed separately, income was the only variable associated with transportation difficulty among Whites. Among Blacks, income was not related to transportation difficulty but several variables other than income (age, gender, marital status, MMSE scores and depression) were.

### Keywords

Transportation Difficulty; Rural; Black and White older adults

Transportation is a vital concern for rural dwelling, elderly people because it connects them to their respective social convoys, to goods and services necessary for sustaining life, and to opportunities for meaningful social interaction (Cobb & Coughlin, 2000; Glasgow, 2000b; Kerschner, 2006). Rosenbloom's (2004) analysis of mobility and the elderly indicates that most older adults are licensed drivers, and use private vehicles as their primary source of transportation. However, some older adults encounter transportation difficulty because they do not drive or cannot find "satisfactory travel alternatives to access needed services and facilities" (p. 3). Among non-drivers transportation difficulty could be due to unavailability of public transportation or taxis, wanting to take trips for which walking is not feasible, and/

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or being unable to identify others to drive them where they want to go. Transportation difficulty in this paper is defined as having difficulty getting transportation where people want to go or limiting one's activities because of transportation difficulty. Difficulty with transportation in rural settings can result in social isolation and deterioration of quality of life in addition to limited access to services. In emergency circumstances, such as the recent Katrina disaster, transportation difficulty can mean the difference between life and death (Gullette, 2006; Parker et al., 2007).

Rural residents disproportionably experience transportation difficulty because rural areas are sparsely populated and lack public transportation services (Arcury et al., 2005a, 2005b). Rural elders are subject to higher transportation costs than their urban counterparts because walking and public transportation are typically not feasible options, and their trips are likely to be longer (Rosenbloom, 2004). Black rural elders have lower individual and family incomes and are also likely to be in poorer health than White rural elders (Roff & Klemmack, 2003). Thus they may be in need of more health-related transportation and find it more difficult to afford such transportation than White counterparts. The purpose of this study was to examine differences in self-reported transportation difficulty among rural, Black and White community dwelling older adults and to understand factors related to any differences found by race.

## Transportation Issues for Older Adults in Rural Areas

Although transportation fundamentally influences access to various services and thus affects quality of life, 40% of the U.S. population in rural areas have no public transportation services available, and 25% have insufficient transportation (Glasgow, 2000a). In rural areas without public transportation, taxi services are rare or likely to be prohibitively expensive. Although some senior centers in rural areas provide van transportation, rural elders' transportation options are typically limited to walking, bicycling, or using a private vehicle. Vehicle users can be classified as drivers and riders (Rosenbloom & Waldorf, 1999). To be a driver, one must have access to a vehicle and be capable of operating it. Riders include those who never held a driver's license and those who formerly had a license but lost it or gave it up (Rosenbloom, 2004). Riders are thus dependent for transportation on family, friends, acquaintances, church groups, and/or those whom they can pay to transport them in private vehicles.

The proportion of older persons who live in rural areas (14.7%) is higher than in metropolitan areas (11.9%) and rural older adults have to travel longer distances than urban older adults to access services and activities (Rosenbloom, 2004). Rural older adults tend to be older, have lower economic status, and be in poorer health than urban older adults (Roff & Klemmack, 2003). These individual characteristics suggest that rural older adults may be less capable of driving and/or affording vehicle transportation. Structural barriers inherent in the rural community in combination with individual disadvantages present challenges for rural, older adults in getting to the places where they want to go.

## Racial Differences in Transportation Experiences

Rosenbloom and Waldorf (1999) note that very little research has focused on racial/ethnic differences in transportation use and even fewer studies have addressed racial/ethnic differences in older adults' transportation experiences. They cite studies conducted in Los Angeles more than thirty years ago that found racial/ethnic differences among older adults in possession of a driver's license, ride sharing and ride giving behavior, and fear of crime on public transit systems. Data from the 1990 Nationwide Personal Transportation Survey found that Black elders were more likely than White or Hispanic elders to use walking or public transportation than private cars, and that White older women travelled longer

distances and more frequently than Black and Hispanic older women, even when income was controlled (Rosenbloom, 1994). More recent analyses of national data suggest that racial minorities are more likely to use public transportation than Whites, and that living in an urban core area lowers elders' likelihood of using automobiles (Rosenbloom & Waldorf, 1999). Gesler, Jordan, Dragomir, Luta and Fryer (1999) examined travel for health care in two rural North Carolina communities and discovered that over 85% health care visits were by private car. Those who rode in others' cars (as compared with driving themselves) were more likely to be older, female, and Black. Yet, none of the aforementioned studies examined elders' self reports of the difficulty they had with obtaining transportation.

## Factors Potentially Related to Transportation Difficulty

The widely-cited health behavior model (Andersen, 1995; Andersen & Newman, 2005) provides a framework for understanding the variables that influence use of services or health care. The health behavior model, originally developed in the 1960s to explain individuals' use of health services, has been expanded as a theoretical framework to identify predictors of formal service use of older adults and their family caregivers (Bookwala, Zdaniuk, Burton, Lind, Jackson, & Schulz, 2004; Gill, Hinrichsen, & DiGiuseppe, 1998). The health behavior model indicates that service use can be understood by examining three categories of variables: (a) predisposing characteristics indicating that some individuals have a greater propensity to use services (e.g., demographic factors such as race, age, and gender); (b) enabling resources through which individuals can obtain services (e.g., marital status, income, community resources, and social support); and (c) need characteristics (health or mental health status) illustrate conditions that lead individuals to seek health and social services. We argue that the three categories of factors would influence rural older adults' self-reported transportation difficulty, a proxy measure of service use in this paper. That is, perceived transportation difficulty may reflect the lack of an essential resource in an individual's life, which will be explained by predisposing, enabling, and need characteristics. We adapt the health behavior model to suggest that a rural older adult's report of transportation difficulty may vary on the basis of race (a predisposing variable) and may further be influenced by other predisposing variables, enabling variables, and need variables. Figure 1 presents our conceptual model.

There are well-known differences between Black and White older adults on a number of the variables in this model (e.g., income, marital status, and health) (Administration on Aging, 2005), suggesting that any race differences found in reports of transportation difficulty might be accounted for by differences on these variables. Disparities in access to transportation (an indicator of accessibility to essential services) may indicate inequitable access to resources (Andersen, 1995). Thus understanding the gaps among Black and White rural older adults should provide insights on delivering equitable services. Yet, little has been done in examining racial differences in transportation difficulty, in particular, in rural settings where public transportation or assistance is sparse. By examining transportation difficulty among rural Black and White older adults, this study will identify factors associated with transportation difficulty and thereby offer suggestions and implications regarding providing transportation services for Black and White older adults.

## Research Questions

The aim of this study was to understand rural Black and White older adults' self-reports of transportation difficulty. We posed three research questions: (1) Are there racial differences in self-reports of transportation difficulty among rural older adults? (2) If so, do race differences remain significant when we introduce controls for other predisposing

characteristics, enabling resources, and, need factors? (3) Are there race by covariate effects in self-reports of transportation difficulty?

For question 1, we anticipated that Blacks would report more transportation difficulty than would Whites. For question 2, we anticipated that these racial differences would disappear when predisposing, enabling, and health-related need variables were introduced because these variables could explain great proportion of the variance in transportation difficulty, thus eliminate racial differences in reported transportation difficulty. We expected that older Blacks would report greater transportation difficulties because they are more likely to be associated with risk factors (unmarried status, lower incomes, poorer health, and lower cognitive functioning) for transportation difficulty than are older White counterparts. Based upon previous research evidence and the current sample characteristics, we ruled out the effects of other covariates. Although being old and females could be related to transportation difficulty, the variables were equally distributed in the sample; thus we would not expect them to be associated with transportation difficulty controlling for race. Although we expected that social support, church service attendance, co-morbidity and depression would be related to having transportation difficulty, we did not make predictions about whether Blacks and Whites would differ on these variables because findings in racial differences in these areas are mixed. Researchers suggest there is little racial difference in social support among community-dwelling older adults (Burton, et al., 1995; Norgard, & Rodgers, 1997). In terms of church service attendance, older Blacks tend to exhibit higher levels of religious participation (Krause, 2002; Levin, Chatters, & Taylor, 2005); however, high service attendance has been observed in this sample regardless of race. Overall lack of racial differences has been reported in depression; also racial differences in depressive symptoms tend to become minimal when other variables (such as education, income, and cognitive status) are controlled (Blazer, Landerman, Hays, Simonsick, & Saunders, 1998). Lastly, it is difficult to predict racial differences in transportation difficulty associated with co-morbidity because some diseases are more prevalent among Blacks while others are among Whites (Sundquist, Winkleby, & Pudaric, 2001). For question 3, we anticipated that race differences in transportation difficulty could be moderated by marital status, income, self-rated health, and cognitive functioning.

## Method

### Sample

This study used secondary analysis of data from a population-based, prospective study of community-dwelling adults, conducted by the University of Alabama at Birmingham (UAB) Center for Aging. The primary focus of the study was on life-space mobility. The initial sample consisted of 1,000 adults 65 and older randomly selected from a list of Medicare beneficiaries in five central Alabama counties (three primarily rural and two mostly urban). The designation of counties as rural was based on the Alabama Rural Health Association's classification (1998), a coding system involving the percent employed within the county, the dollar value of agricultural products, the population per square mile, and the size of the largest city within the county. All counties designated as rural had more than 50% of their population residing in rural areas.

All potential participants received a letter describing the study and a toll-free number they could call if they did not want to be contacted to participate. Letters were mailed in sets of 50–100 until recruiting goals were met. The sample was stratified by county, race, and gender to include balanced numbers of rural/urban, Black males and females and rural/urban, White males and females. Ten days after the letters were mailed, potential participants were telephoned in efforts to schedule an in-home interview. Individuals were deemed eligible if they were able to make arrangements on the telephone for an in-home

interview and were 65 years of age or older. We did not intentionally include persons with mild cognitive impairment, but we did not want to exclude them either. If respondents were not able to answer the first few questions of the interview by themselves the interview was not conducted. Among the rural Blacks contacted, 255 of the original 463 telephoned (55%) became participants. Among the rural Whites contacted, 259 of the original 540 telephoned (48%) agreed to participate. Thus, Black rural older adults were less likely to refuse to participate in the study than White counterparts (45% vs. 52%). For more details on participation recruitment, see Allman, Sawyer, and Roseman (2006). The present study included the 514 rural participants who completed in-home baseline interviews lasting approximately two hours.

## Measures

**Dependent variable (self-report of transportation difficulty)—**Transportation difficulty was assessed by asking participants two questions: “Over the past four weeks, have you had any difficulty getting transportation to where you want to go?”; and “Do you limit your activities because you don’t have transportation?” Respondents received a score of 1(transportation difficulty) if they responded “yes” to either or both questions and 0 (no difficulty) if they responded “no” to both questions. The rationale for using two different questions was that some participants may have restricted their ideas of “where they want to go” because of the seeming impossibility of getting there. The question about limiting activities could prompt respondents to think of activities they previously had enjoyed but, might have given up when health, driving ability, or some other factors limited their ability to participate.

**Predisposing characteristics—**Demographics variables included age (in years) and gender (1 = female; 0 = male).

**Enabling resources—**Marital status was coded as 1 = married and 0 = otherwise. Income was measured as household income using ten categories: (0) = none to (9) = $50,000 or more. Perceived social support was measured using the social support subscale of the Arthritis Impact Measure (AIMS) 2 (Meenan, Mason, Anderson, Guccione, & Kazis, 1992). Representative items asked participants how often they felt that “family or friends would be around if you needed assistance” and how often participants felt “that your family or friends were interested in helping you solve problems.” Scores on this subscale range from 4 to 20 with lower scores indicating lower social support. Cronbach’s alpha with these participants was .80. Religious service attendance was measured using a six point scale ranging from 1 = more than daily to 6 = never. This variable was included because regular church attenders are likely to have contacts beyond family and friends upon whom they can call for assistance (Ellison & George, 1994; Taylor & Chatters, 1988; Williams & Dilworth-Anderson, 2002).

**Need characteristics—**Self-rated health was measured using a question that asked older adults to rate their health status from poor (1) to excellent (5). We also measured physical health using a co-morbidity index (Charlson et al., 1986), giving one point for each disease category listed without consideration of severity (range = 0–9). Diseases were counted if participants reported taking medication for the condition, their primary physician had told them they had the condition, or the condition was documented on a hospital discharge within the three years before they were interviewed. Thus scores on the co-morbity index were based on information obtained from in-home interviews, questionnaires sent to the participant’s physician, and discharge summaries for those who had been hospitalized within the last three years (see Allman, Baker, Maisiak, Sims & Roseman, 2004 for additional information). Cognitive functioning was measured by the Mini Mental State Exam (MMSE) (Folstein, Folstein, & McHugh, 1975). Scores range from 0 to 30 with higher scores

indicating better cognitive functioning. Depression was measured using the short Geriatric Depression Scale (GDS) (Sheikh & Yesavage, 1986). The instrument is scored from 0 to 15, with higher scores indicating more symptoms of depression.

**Data Analysis—**The primary focus of this study was whether rural Blacks differ from rural Whites in self-reports of transportation difficulty. The predisposing, enabling, and need variables represented factors that might explain any race differences that occurred. First, we determined if there were Black-White differences in self-reported transportation difficulty. Next, we determined if there were Black-White differences in the predisposing, enabling, and need variables. If there was a Black-White difference on one of these variables, we examined if that variable was also related to self-reported transportation difficulty. If the variable was related both to Black-White status and to transportation difficulty, we included a race by the variable interaction term in the model. Finally, we used stepwise logistic regression using race as the variable in the first step; adding the predisposing, enabling, and need variables in the second step; and adding the interaction terms in the third step.

## Results

Table 1 shows sample characteristics. Black and White older adults were comparable with respect to age, proportion of females, religious service attendance, social support, comorbidity, and depression. However, statistically significant differences between Blacks and Whites were found regarding marital status, income, social support, self-rated health, and MMSE scores. Compared to Whites, Blacks were less likely to be married (36% vs. 59%), more likely to be in the lower income category (1.89 vs. 4.05) and reported more social support (6.06 vs. 5.54). Blacks rated their health slightly higher (3.49 vs. 3.25) and had lower MMSE scores (21.90 vs. 26.69). More Blacks (25%) than Whites (12%) reported having transportation difficulty ($p < .001$, see Table 1).

Of the five variables that could potentially explain Black-White differences in transportation difficulty (i.e., on which there were statistically significant differences between Blacks and Whites), four had statistically significant relationships with transportation difficulty. Slightly over half of those who were not married (53%) compared to slightly less than a quarter (23%) of those who married reported having transportation difficulty. Also, those who reported having transportation difficulty had substantially lower incomes than did those who did not (M = 1.80, SD = 1.36 for those who reported difficulty vs. M = 3.36, SD = 2.26 for those who did not), had poorer self-reported health (M = 3.83, SD = .97 for those who reported difficulty vs. M = 3.27, SD = 1.13 for those who did not), and had lower MMSE scores (M = 21.74, SD = 5.82 for those who reported difficulty vs. M = 24.88, SD = 4.78 for those who did not). Because social support was not related to self-reported transportation difficulty, an interaction term for this variable was not included in the model.

Although being Black was associated with more self-reported transportation difficulty when it was the only variable in the logistic regression model, the relationship disappeared when the other predisposing factors, the enabling factors, and the need factors were included (see Table 2). In this second stage, those who were older, female, and had more depressive symptoms reported having more transportation difficulty than did those who were younger, male, and less depressed. In the full model that includes the interaction terms, being Black was still not related to transportation difficulty. However, there was a Black-White by income category relationship to self-reported transportation difficulty. The correlation of income category with self-reported transportation difficulty for Whites was −.335 ($p < .001$), while the correlation for Blacks was −.123 ($p < .05$), suggesting that income level was more important in determining self-reported transportation difficulty for Whites than for Blacks.

To better understand the Black-White by income category interaction with self-reported transportation difficulty, we conducted multivariate logistic regression analyses of the relationship between the predisposing, enabling, and need variables and transportation difficulty separately for Blacks and for Whites (see Table 3). For Blacks, there was no relationship between income and self-reported transportation difficulties. Instead, Blacks who were older, female, not married, with lower MMSE scores and higher depression scores reported more transportation difficulties. For Whites, the only variable related to self-reported transportation difficulties was income. Whites who reported lower income levels were more likely to report transportation difficulties. Thus the interaction of race by income reflected a strong relationship of income to transportation difficulty for Whites and no relationship of income to transportation difficulty for Blacks.

## Discussion

The first question this study addressed was whether rural, Black older adults were more likely than rural, White older adults to report that they had difficulty getting transportation to where they wanted to go and/or that they limited their activities because they did not have transportation. Slightly more than 25% of Blacks reported such difficulty, compared with about 12% of Whites. In these rural counties Black elders are at a substantial disadvantage when compared with their White counterparts in securing transportation. Because vehicular transportation is a virtual necessity in accessing many health care services in rural settings, this transportation disparity may be particularly important in understanding some of the health disparities that exist between rural Black and White older adults. Policy makers and program planners should be particularly mindful of the needs of rural, Black older adults in designing services and means to access them.

The second question addressed in this study was whether the transportation disparity we found could be explained by factors other than race. As we expected would be the case, the race differences were accounted for by other factors in our model. In examining the relation of race to transportation difficulty with the addition of predisposing, enabling, and need variables, we discovered that age, gender, and number of depressive symptoms explained the race difference. It was quite surprising that income was not related to transportation difficulty in this phase of the analysis.

The lack of relationship of income to transportation difficulty was resolved when the race by income interaction term was introduced. In addressing the third research question we found that participants with higher incomes were less likely to report transportation difficulty, but the interpretation of this effect was clouded by a race by income interaction. Among White participants, those with higher incomes were less likely to report transportation difficulty. Among Blacks there was no relationship between income and transportation difficulty. Examination of sample characteristics in Table 1 reveals that there was very little variation among Blacks on income and that the mean income level of Blacks was extremely low (less than $5,000 annually). This “floor effect” accounts for the lack of relationship between income and transportation difficulty among rural, Black older adults.

These findings concerning the interaction effects led to further separate analyses for Blacks and Whites: when we consider Blacks and Whites separately, what variables are associated with transportation difficulty? For Whites the only variable associated with transportation difficulty was income. Poor whites are unlikely to be able to maintain an automobile or to pay others to drive them where they want to go. Their relatives and friends may be similarly disadvantaged or otherwise unable to help with transportation. This suggests that practitioners must be creative in finding ways to help low income White older adults meet their transportation needs and/or to bring health or other services to them. This study found

no other variables that would help policy makers and planners target their efforts in relieving transportation difficulty among Whites.

As noted earlier, income levels of Black participants were very low, but because there was so little variability in income, it did not differentiate between those with and without transportation difficulty. Low income, however, is very likely to limit older Blacks' opportunities to own and operate vehicles and to pay others to drive them. Further, individuals' family members and friends are typically from similar economic circumstances and thus low income Black older adults may not have members of their social network who can easily afford to help them with transportation.

The factors that were associated with transportation difficulty among Blacks were older age, being female, having lower cognitive functioning, and having more depressive symptoms. These findings are consistent with the notion of "triple jeopardy" (Dressel, 1988) in that older, Black females are particularly at risk for transportation difficulty. Reasons may include never having learned to drive, not having a car, lack of relatives or friends with whom to ride, and reluctance to ask others for favors (Rosenbloom, 1999). The finding that Black women and the oldest old have more transportation difficulty speaks to the need for targeted attention to these groups in planning transportation efforts.

The finding that lower cognitive functioning is associated with transportation difficulty may reflect an older adult's decision to give up driving because of confusion or a decision of family members to "take the keys away." An additional possibility is that family members and friends of persons with cognitive impairment may be reluctant to take them shopping, to church, or to social events for fear of embarrassment. Programs to serve persons with cognitive impairment in rural areas (e.g., adult day care) that provide transportation may be important in preventing social isolation and in providing a locus where the older adults can access other health and social services (e.g., health assessments, case management).

The association in this cross-sectional study between depressive symptoms and transportation difficulty is difficult to interpret. One possibility is that depression has resulted in transportation difficulty. Depressed people may be less likely to have the energy to arrange for their own transportation, or family/friends may be uninterested in providing transportation to a person with depressed affect. Another explanation is that people tend to be isolated in rural areas and social isolation may lead to depression. Because depressed people tend to isolate themselves, they may not have people who can drive them. Being unable to go where one wants to go may result in depressive symptoms. Transportation difficulty also restricts one's access to mental health services that might alleviate the depression. It is likely that depression and transportation difficulty affect each other in such a way that they both become more problematic with time. Regardless of causality, these findings suggest it is important that practitioners be particularly attentive to meeting the transportation and mental health needs of rural, Black older adults. In-home delivery of mental health services to this population (Scogin et al., 2007) may be an effective way to improve quality of life.

people are more isolated in rural areas, and that there is probably a nonrecursive association between rural residence and depression, isolation leads to less contact with people which may be desired and also may ultimately lead to depression. Depressed people tend to isolate themselves also, so that they do not have anyone to drive them places.

In summary, these findings suggest that among rural elders, interventions to relieve transportation difficulty are most needed among low income persons of both races. Further, interventions are needed that target Blacks who are in the oldest age ranges, who are female, who have cognitive impairment, and who have symptoms of depression. Future

transportation policy affecting elders (Cobb & Coughlin, 2000) as well as plans for service design (Butler & Webster, 2003) should take these needs into account.

This study is limited in several ways. First, we studied community-dwelling older adults in a single Southern state, limiting the study's generalizability to persons in other areas of the country. Second, because this is a secondary analysis some critical variables that might have been helpful were not included. For example, we were unable to determine if those who reported transportation difficulty also had problems accessing medical care or services, or social activities. Third, we were unable to address the reasons older adults might have given to explain their transportation difficulty. For example, this study did not address directly the role of family members or other caregivers in helping rural elders with transportation difficulty. Future research should take into account the relationship between family members/caregivers' involvement and elders' transportation difficulty, and should also ask older adults to articulate directly their difficulties and perceived needs. Finally, we were not able to control for the contextual dimension of being "rural" such as population density and road network density, thereby we could not determine if all cases were equally rural. Future studies should include variables that could account for rural contexts.

This study indicates that low income rural elders are most at risk for transportation difficulty and that particular attention also needs to be paid to the needs of older Black females and to persons with cognitive limitations and depression. Mental health services are often in short supply in rural areas. Providing transportation without increasing the supply of mental health professionals may not adequately address the psychosocial needs of cognitively impaired and depressed older adults in rural areas. In rural areas safe and reliable transportation (e.g., brining services to the rural older adults such as a mobile unit) is critical to potential service access, acquiring needed resources and activity engagement. Social service agencies, health professionals, and local transportation programs need to coordinate with each other to address the specific needs of older adults who have transportation difficulty. Helping these older adults stay connected with others in their communities and with needed health and social services will be particularly challenging in the coming years as costs for transportation rise for all.

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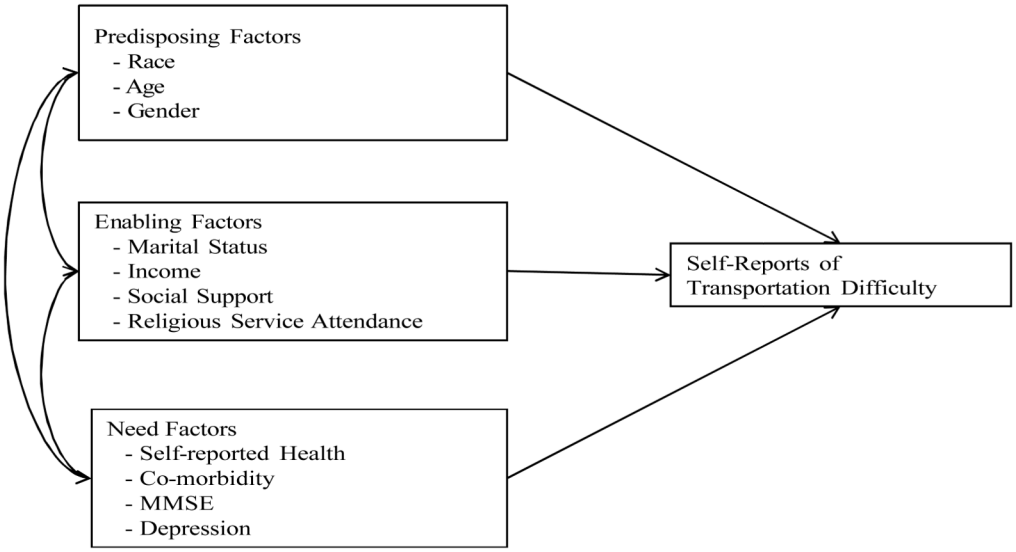


**Figure 1.**
Proposed model of relationships among predisposing, enabling, and need factors and self-reports of transportation difficulty

**Table 1**

Descriptive statistics for Blacks and Whites

| | Blacks (N = 255) | | | Whites (N = 259) | | |
|---|---|---|---|---|---|---|
| | **M** | **SD** | **Range** | **M** | **SD** | **Range** |
| Predisposing factors | | | | | | |
| Age | 75.66 | 6.01 | 65–85+ | 74.68 | 5.93 | 65–85+ |
| Female | 0.50 | 0.50 | | 0.50 | 0.50 | |
| Enabling factors | | | | | | |
| Married | 0.36 | 0.48*** | | 0.59 | 0.49 | |
| Income | 1.89 | 1.64*** | 1–9 | 4.05 | 2.27 | 1–9 |
| Social support | 6.06 | 3.14* | 4–20 | 5.54 | 2.57 | 4–20 |
| Service attendance | 4.36 | 2.55 | 1–6 | 4.34 | 1.74 | 1–6 |
| Health/Mental Health Factors | | | | | | |
| Self-rated health | 3.49 | 1.10* | 1–5 | 3.25 | 1.13 | 1–5 |
| Co-morbidity | 2.26 | 1.55 | 0–9 | 2.42 | 1.68 | 0–8 |
| MMSE | 21.90 | 5.42*** | 1–30 | 26.69 | 3.45 | 11–30 |
| Depression | 2.72 | 2.44 | 0–14 | 2.39 | 2.56 | 0–13 |
| Transportation difficulty | .25 | 0.43*** | | .12 | 0.32 | |

* Difference between groups using a two-tailed t-test is statistically significant, $p < .05$

*** Difference between groups using a two-tailed t-test is statistically significant, $p < .001$

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**Table 2**

Likelihood of transportation difficulty as a function of race, predisposing factors, enabling factors, need factors, and race interactions with other predictors

| | Race Only [a] | | | Race + covariates | | | Race + covariates + interactions | | |
|---|---|---|---|---|---|---|---|---|---|
| | **B** | **SE** | **Exp(B)** | **B** | **SE** | **Exp(B)** | **B** | **SE** | **Exp(B)** |
| Black | .929*** | .243 | 2.531 | .400 | .327 | 1.491 | .662 | 2.029 | 1.939 |
| Predisposing Factors | | | | | | | | | |
| Age | | | | .050* | .023 | 1.052 | .052* | .023 | 1.053 |
| Female | | | | .874** | .304 | 2.397 | .872** | .307 | 2.392 |
| Enabling Factors | | | | | | | | | |
| Married | | | | −.481 | .337 | .618 | −.060 | .584 | .942 |
| Income | | | | −.161 | .093 | .851 | −.419** | .156 | .658 |
| Social Support | | | | .026 | .041 | 1.027 | .028 | .041 | 1.028 |
| Service Attendance | | | | .094 | .081 | 1.099 | .101 | .082 | 1.106 |
| Health/Mental Health | | | | | | | | | |
| Self-rated Health | | | | .168 | .135 | 1.183 | .232 | .241 | 1.261 |
| Co-morbidity | | | | .085 | .081 | 1.089 | .089 | .082 | 1.093 |
| MMSE | | | | −.049 | .028 | .952 | −.025 | .059 | .975 |
| Depression | | | | .156** | .052 | 1.169 | .162** | .052 | 1.175 |
| Interactions | | | | | | | | | |
| Race X Married | | | | | | | −.549 | .688 | .577 |
| Race X Income | | | | | | | .481* | .198 | 1.618 |
| Race X Self-rated Health | | | | | | | −.113 | .277 | .893 |
| Race X MMSE | | | | | | | −.029 | .084 | .972 |
| Constant | −2.033*** | 2.226 | .002 | −6.066** | 2.226 | .002 | −6.567*** | 2.784 | .018 |
| Nagelkerke $R^2$ | | .049 | | | .286 | | | .305 | |

*** $p < .001$,

** $p < .01$,

* $p < .05$

[a] We ran the analysis including predisposing variables only (race, age, and gender) and found that race continued to have a statistically significant effect on transportation difficulty: B = .911, SE = .251, Exp(B) = 2.487 for Race p < .001

**Table 3**

Likelihood of transportation difficulty for Blacks and Whites using multivariate logistic regression

| | Blacks | | | Whites | | |
|---|---|---|---|---|---|---|
| | **B** | **SE** | **Exp(B)** | **B** | **SE** | **Exp(B)** |
| Predisposing characteristics | | | | | | |
| Age | .076* | .032 | 1.079 | .047 | .045 | 1.048 |
| Female | .974* | .430 | 2.648 | .652 | .696 | 1.919 |
| Enabling resources | | | | | | |
| Married | −.796 | .487 | .451 | −.490 | .772 | .613 |
| Income | .179 | .153 | 1.196 | −.549* | .196 | .578 |
| Social support | .036 | .057 | 1.037 | .109 | .085 | 1.115 |
| Service attendance | −.080 | .139 | .923 | −.181 | .145 | .834 |
| Health/Mental Health | | | | | | |
| Self-rated health | −.120 | .189 | .887 | −.186 | .285 | .830 |
| Comorbidity | .064 | .109 | 1.066 | −.112 | .163 | .894 |
| MMSE | −.104* | .039 | .901 | .013 | .072 | 1.013 |
| Depression | .181* | .081 | 1.199 | .144 | .072 | 1.16 |
| Constant | −6.718* | 2.925 | .001 | −6.602 | 4.616 | .001 |
| Nagelkerke $R^2$ | .290 | | | .387 | | |

*$p < .05$