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Medical Skepticism and Complementary Therapy Use among Older Rural African-Americans and Whites

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Abstract

Purpose—This study documents demographic, health, and complementary therapy (CT) correlates of medical skepticism among rural older adults.

Methods—Older (≥ 65 years) African Americans and Whites in rural North Carolina (N=198) were interviewed. Medical skepticism was assessed using the four items from the Medical Expenditure Survey. Bivariate associations between medical skepticism and demographic and health characteristics and CT use were assessed, and independent effects on CT use.

Findings—Positive responses to medical skepticism questions ranged from 19.7% (can overcome illness without help) to 59.6% (believes own behavior determines their health). Medical skepticism indicators were associated with few demographic and health characteristics, and one CT category.

Conclusions—This study shows a high degree of medical skepticism among rural older adults, but limited associations with demographic and health characteristics and CT use. Further research is needed to understand relationships of attitudes towards conventional care and CT use in this population.

Keywords

Medical skepticism; complementary therapies; rural older adults; African Americans

Complementary therapy (CT) use is common among older adults, particularly those in rural communities.^{1–5} These studies have shown that CT use is heterogeneous and varies by race/ethnicity, gender, education, chronic conditions, and access to health care. One factor that

may be related to CT use is medical skepticism. Defined as the doubts associated with the ability of conventional medical care to alter health status,⁶ medical skepticism is associated on the one hand with higher overall self-rated health, but also with less use of and lower satisfaction with conventional medical care, higher rates of unhealthy behaviors, and overall mortality.^{6–11}

Medical skepticism may be an important contributor to the decisions older adults make to initiate CT use. Astin¹² cogently argued that frustration with and skepticism of conventional medicine is among the primary factors contributing to CT therapy use. Samples of populations that are avid CT users, such as patients with arthritis,^{9–11} frequently report skepticism of conventional medicine. However, overall, limited data are available on the association between medical skepticism and CT use. The majority of the existing data are based on samples in a disease-specific clinical setting.^{9–11}

Older rural adults, particularly those who are racial/ethnic minority group members, have had limited access to conventional health care systems throughout their lives,^{13–16} and thus may have more negative views of the ability of conventional care to address their health care needs. This study will examine the following in a sample of older African American and White adults in rural central North Carolina: (1) the levels of medical skepticism; (2) the demographic and health correlates of medical skepticism; and (3) the association of medical skepticism with CT use. This study represents an opportunity to examine the association of medical skepticism with CT use in a more representative sample than found in most previous studies.

Methods

Data for this analysis were drawn from a larger study designed to document the daily use of CTs of older adults (aged ≥ 65) in three rural counties in south-central North Carolina.¹⁷ Eligibility criteria included being a community-dwelling adult aged ≥ 65 in the study counties, self-identified as African American or White, English-speaking, and in sufficiently good health to give informed consent and to complete the interview. The sample was stratified by ethnicity (African American and White) and gender so that approximately 50 participants were recruited into each ethnic/gender group. A site-based procedure was used to recruit a representative sample of the broader population.¹⁸ A total of 200 African American and White older adults completed baseline interviews. Twelve individuals refused to participate, for a participation rate of 94.4%. All participant recruitment and data collection procedures were approved by the Wake Forest School of Medicine Institutional Review Board and all participants gave signed informed consent.

The primary outcome for this analysis was use of CTs. The items used to identify CT use were based on the general literature, our long-term research in rural communities, and in-depth interviews on CT use completed with older adults in the study counties.^{1,5} These questions asked if participants had used 11 specific home remedies (honey, lemon, vinegar, baking soda, olive oil, table salt, whiskey, Epsom salt, Vaseline®, kerosene or turpentine, and WD-40®), nine specific vitamins or minerals (multivitamin, vitamin A, vitamin B6, vitamin C, vitamin E, calcium, iron, magnesium, zinc), six specific herbs (aloe, garlic, ginseng, Ginkgo biloba, chamomile, mint), four specific supplements (flaxseed oil, fish or omega-3 supplements, coenzyme Q10, glucosamine sulfate, chondroitin), three specific practitioners (chiropractor, physical therapist, massage therapist), and four specific self-care practices (relaxation, meditation, massage, exercise) in the past year. Study participants were considered users of the individual categories if they reported using at least one product within the category within the past year.

The primary predictor variable for this analysis was medical skepticism, which was assessed with four items used in the Medical Expenditure Survey.^{6,8} The items include (1) I can overcome illness without the help of a medically trained professional; (2) Home remedies are often better than drugs prescribed by a doctor; (3) It is individual behavior that determines how soon an individual gets well; and (4) I understand my health better than most doctors. Response options for the items range from strongly disagree (1) to strongly agree (5). While the items can be summed with higher values indicating greater medical skepticism, the internal consistency in our sample was poor ($\alpha = 0.56$); therefore, like previous research,^{8,10} this analysis examined each question individually. Furthermore, two participants did not complete the medical skepticism scale, so the analyses for this study include 198 participants.

Potential covariates examined included gender, ethnicity (African American, White), age (65–74 years, ≥ 75 years), marital status (currently married, not currently married), educational attainment (less than high school, high school or more), and migration status (always lived in the South, lived outside the South at some time). Health status was assessed by the presence of any of 17 physician-diagnosed chronic conditions, which was dichotomized into less than three or three or more. We also examined the association of medical skepticism with three chronic conditions common among older adults (arthritis, diabetes, heart disease). Supplemental health insurance status was classified as having any health insurance that supplemented Medicare. Poverty status (Yes, No) was assessed using Census guidelines for annual household income and household composition.

Each skepticism criteria was dichotomized by grouping responses as either more skeptical (Agree or Strongly agree) or less skeptical (Strongly disagree, Disagree, or Neither agree nor disagree). Basic frequencies of CT use, medical skepticism and demographic variables were computed. Chi-squared and analysis of variance tests were performed to assess bivariate associations and mean differences, respectively, between each medical skepticism criterion and demographic, health, and CT use characteristics. Logistic regression (for the dichotomous medical skepticism outcome) was used to assess the independent effects of medical skepticism (independent variable) with CT use (dependent variable), adjusting for potential covariates. The Type I error rate was fixed at .05. All computations were performed with SAS statistical software (SAS Version 9.2, SAS Institute, Inc., Cary, NC, USA).

Results

The majority of the sample was younger than 75 years of age, had a high school diploma, had supplemental health insurance, was not married, had lived in the South his/her entire life, and had three or more chronic health conditions. More than one-quarter had incomes reflective of living in poverty (Table 1). The majority of participants agreed or strongly agreed with the statements that their own behavior best determines their health (59.6%), and that they understand their own health better than doctors (58.1%). About one in five agreed or strongly agreed with the statement that they can overcome illness without help, and nearly 30% agreed or strongly agreed with the statement that home remedies are better than drugs for maintaining good health. The majority of participants reported using any home remedy, any vitamin or mineral supplement, or any self-care therapy. The other three categories were used by about 26%–28% of study participants.

Six of 32 bivariate associations between medical skepticism questions and demographic and health characteristics were found to be statistically significant (Table 2). The younger age group was significantly more likely than older adults to report that their own behavior determined their health. Females reported significantly more often than males that they

understand their own health better than a medical professional. Whites reported significantly more often than African Americans that home remedies were better than conventional medicine. Those living in poverty were significantly less likely to positively report that they can overcome illness without help. Those who had always lived in the South were significantly more likely than those who had lived outside the South to report that they can overcome illness without help from a health care provider. Those without arthritis were significantly more likely than those with arthritis to report that they can overcome illness without help from a health care provider.

Only one association was statistically significant between CT use and medical skepticism in logistic regression (Table 3): people who reported that they used any self-care therapy were more than four times more likely to report they could overcome illness without help from a health care provider (OR = 4.24, 95% CI 1.13–15.92).]

Discussion

Complementary therapy use among older adults is common, and the factors related to CT use are likely multi-faceted. One factor that might contribute to the initiation and use of CTs is the attitudes that older adults have toward conventional health care. We examined, in a sample of older African American and White men and women in rural North Carolina, the levels of medical skepticism, and its association with demographic and health characteristics and with CT use.

With regard to our first aim, we determined that there was a varying degree of responses to the questions from the medical skepticism scale (from 19.7% for the question pertaining to overcoming illness without help, to 59.6% for the question pertaining to the participant believing that their own behavior determined their health). Rohrer and colleagues¹⁰ found less variation in positive responses to three of the medical skepticism questions (33.15% for overcoming illness without help to 53.59% for understanding own health) in a cross-sectional survey of older adults in west Texas. It is not clear why our sample had a much lower positive response to the overcoming illness question compared with the sample in the study by Rohrer and colleagues, although it may be due to our sample having a lower level of formal education (63.1% vs. 74.9% with a high school education) and having a far higher proportion from a racial/ethnic minority group (49% African American vs. 14.6% racial/ethnic minority—10.4% Hispanic and 4.2% African American).

With regard to our second aim, we found limited associations between demographic and health characteristics and medical skepticism. Our finding that the younger age group was significantly more likely than older adults to report that their own behavior determined their health is similar to the finding of Callahan *et al.*,⁹ who found an inverse association between age and overall medical skepticism score among patients in a rheumatology clinic. Similarly, Fischella and colleagues⁶ showed an inverse association between age and medical skepticism score from a representative U.S. sample. Additionally, like Fischella and colleagues, we found that Whites had an overall medical skepticism score that was significantly higher than African Americans (data not shown), primarily due to higher levels of positive responses to the question pertaining to the use of home remedies (Table 2).

Finally, we examined the association between medical skepticism and CT use. Surprisingly, only one comparison between medical skepticism and CT use were found to be statistically significant. Those who reported that they used any self-care therapy were more than four times more likely to report they could overcome illness without help. This difference remained significant after adjustment of demographic and health characteristics. These results diverge from previous research suggesting that medical skepticism may be a factor

contributing to CT use,^{9,11} at least among older adults. Callahan *et al.*⁹ showed that medical skepticism was positively associated with the utilization of complementary and alternative medicine (CAM) providers among patients being treated for arthritis in a rheumatology clinic. This study also showed that medical skepticism was higher among those with osteoarthritis and fibromyalgia compared with those with rheumatoid arthritis, and duration of disease was not associated with skepticism. Wiley-Exley and colleagues,¹¹ in a sample of patients seeing medical specialists and non-specialists for musculoskeletal issues, showed that increased skepticism was associated with increased CAM use, particularly among those seeing specialists for their condition.

Unlike these studies, our study included a representative sample of rural older adults with a variety of health conditions. Previous studies have examined the association of CAM use and medical skepticism in arthritis patients at a rheumatology clinic.^{9,11} Given the challenges of conventional medicine in treating the pain associated with arthritis, it is not surprising that the studies of clinical samples of patients being treated for arthritis showed a positive relationship between medical skepticism and CAM use, particularly among more severe cases (those seeking specialists and those with osteoarthritis or fibromyalgia). Our study is the first to our knowledge to assess the association between CT use and medical skepticism in a community-based sample of rural older adults. None of the four skepticism indicators were associated with total number of chronic conditions, suggesting that the relationship between medical skepticism and CT use might be specific to certain conditions such as arthritis in which there are limited options available for conventional treatment.

Additionally, we looked at the differences in medical skepticism according to three chronic conditions common among older adults: arthritis, diabetes and heart disease. Only one significant association was found, and this association was in the unexpected direction (higher levels of agreeing with the question pertaining to feeling that they can overcome illness without help among those without arthritis compared with those with arthritis).

The results of this study must be considered within the context of its limitations. First, this study used cross-sectional, self-report data, which is affected by temporality and potentially by recall bias. Secondly, though we made an attempt to recruit a representative sample of older adults, our data may be limited in generalizability to the communities in which the study was conducted. Third, we used an extensive list of complementary therapies, based on our extensive experience with the study population. We considered CT users similarly regardless of how much or how many therapies they used within each category. This strategy limits the ability to examine the association of medical skepticism with specific types of therapies and may explain the few associations observed between medical skepticism and CT use. Given the large number of statistical tests that were performed in this analysis, there is some chance that any significant findings could be the result of chance alone rather than true associations, and, conversely, the power to detect differences is diminished by the multiple demographic and health characteristics developed in our logistic regression models. Finally, we were using a measure of medical skepticism that has had limited use among rural older adults. Our test of internal consistency limited us from using a composite score from the four questions, which may influence the associations we observed. We also conducted an analysis of the internal consistency for the overall MS scores between Whites and African Americans in our sample. While the scores showed some difference between the two groups (0.691 vs. 0.437), the difference was not statistically significant (95% CI for Whites: 0.594–0.789; 95% CI for African Americans: 0.255–0.620). Thus, there may be some concern with the utility of this scale among racial and ethnic minorities.

Nonetheless, this study does use a thorough measure of CT use, and focuses on a previously understudied population. The largely negative findings of this study may suggest that

medical skepticism does not influence the use of CTs in this population. This is in contrast to Astin's contention that skepticism and frustration with conventional health care is a primary contributor to the initiation and use of CTs.¹² However, there was some indication that those who had lived outside of the study area had differing views on managing their health than those who were life-long residents. Thus, the lack of a causal relationship between medical skepticism and CT use in this population might be shaped by limited experiences outside the rural South.

Another possibility for our findings is that the measure used in this study may not be the most appropriate means to assess attitudes toward conventional health care in this population. We used a validated measure of medical skepticism used in other studies.^{6–11} The scale did not show good internal consistency in our analysis, as was the case in other studies.^{8,10} Additionally, we did not see any consistent pattern of the demographic and health characteristics associated with the individual medical skepticism questions.

Given the high levels of CT use, and the limited understanding of the factors that contribute to CT use, the findings of this study warrant the further investigation of the factors associated with the initiation and CT use among rural older adults. In particular, since older adults regularly engage the conventional health care system, the degree to which the attitudes towards conventional health care influence CT use in this population should be considered.

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Notes

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TABLE 1**DEMOGRAPHIC, HEALTH, MEDICAL SKEPTICISM, AND COMPLEMENTARY THERAPY CHARACTERISTICS OF STUDY PARTICIPANTS (N= 198)**

Characteristic	N (%)	Mean ($\pm$ SD)
Age Group		
65–74 Years	117 (59.1)	
75 Years	81 (40.9)	73.8 $\pm$ 6.9
Gender		
Male	96 (48.5)	
Female	102 (51.5)	
Ethnicity		
White	101 (51)	
African American	97 (49)	
High School Graduate		
Yes	125 (63.1)	
No	73 (36.9)	
Supplemental Insurance		
Yes	158 (79.8)	
No	40 (20.2)	
Poverty Status		
Yes	53 (27.8)	
No	138 (72.2)	
Currently Married		
Yes	79 (39.9)	
No	119 (60.1)	
Always Lived in the South		
Yes	119 (60.1)	
No	79 (39.9)	
Chronic Health Conditions		
< 3	33 (16.7)	
3	165 (83.3)	5.2 $\pm$ 2.7
Medical Skepticism (% Agree/Strongly Agree)		
Can overcome illness without help	39 (19.7)	
Home remedies better than drugs	57 (28.8)	
Own behavior determines health	118 (59.6)	
Understands own health better	115 (58.1)	
Complementary Therapy Use (% Users)		
Any home remedy	169 (85.4)	
Any vitamin or mineral supplement	135 (68.2)	
Any herbal remedy	56 (28.3)	
Any supplement	56 (28.3)	
Any complementary therapy practitioner	52 (26.3)	

Characteristic	N (%)	Mean ($\pm$ SD)
Any self-care therapy	144 (72.7)	

TABLE 2

BIVARIATE ASSOCIATIONS BETWEEN DEMOGRAPHIC AND HEALTH CHARACTERISTICS AND RESPONSES TO MEDICAL SKEPTICISM QUESTIONS

	Percent Agree/Strongly Agree			
	Can overcome illness without help	Home remedies better than drugs	Own behavior determines health	Understands own health better
Age Group				
65–74 Years	22.2	27.4	65.8 *	59.8
75 Years	16.0	30.9	50.6	55.6
Gender				
Male	20.8	24.0	59.4	49.0 *
Female	18.6	33.3	59.8	66.7
Ethnicity				
White	24.8	37.6 *	64.4	63.4
African American	14.4	19.6	54.6	52.6
High School Graduate				
Yes	22.4	28.8	61.6	59.2
No	15.1	28.8	56.2	56.2
Supplemental Insurance				
Yes	20.3	29.7	60.8	60.1
No	17.5	25.0	55.0	50.0
Poverty Status				
Yes	9.4 *	30.2	66.0	54.7
No	23.9	27.5	57.3	59.4
Currently Married				
Yes	24.1	30.4	51.9	53.2
No	16.8	27.7	64.7	61.3
Always Lived in the South				
Yes	25.2 *	32.8	57.1	59.7
No	11.4	22.8	63.3	55.7
Number of Chronic Health Conditions				
< 3	27.3	39.4	66.7	54.5
3	18.2	26.7	58.2	58.8
Arthritis				
Yes	15.4 *	30.8	60.8	60.0
No	27.5	24.6	57.4	53.6
Diabetes				
Yes	20.0	22.9	63.8	58.6
No	19.4	31.8	57.4	57.4
Heart Disease				
Yes	17.8	23.3	61.1	52.1

	Percent Agree/Strongly Agree			
	Can overcome illness without help	Home remedies better than drugs	Own behavior determines health	Understands own health better
No	21.0	32.3	58.9	61.3

*
p value < .05 for bivariate comparisons using Chi-Square test

RESULTS FROM LOGISTIC REGRESSION ANALYSES EXAMINING ASSOCIATIONS BETWEEN MEDICAL SKEPTICISM AND CT USE^a

TABLE 3

Outcome	Can overcome illness without help	Home remedies better than drugs	Own behavior determines health	Understands own health better
Any Home Remedy	0.76 (0.22–2.65)	1.66 (0.49–5.57)	1.37 (0.51–3.64)	1.69 (0.63–4.53)
Any Vitamin or Mineral Supplement	0.55 (0.23–1.29)	0.75 (0.33–1.69)	1.92 (0.96–3.83)	1.31 (0.64–2.67)
Any Herbal Remedy	1.55 (0.63–3.83)	1.20 (0.51–2.82)	0.69 (0.33–1.42)	0.82 (0.39–1.73)
Any Supplement	1.05 (0.42–2.63)	1.23 (0.53–2.87)	0.49 (0.23–1.03)	1.48 (0.68–3.21)
Any Complementary Therapy Practitioner	0.74 (0.29–1.93)	1.32 (0.56–3.09)	1.65 (0.77–3.52)	0.76 (0.35–1.64)
Any Self-Care Therapy	4.24 (1.13–15.92)	1.49 (0.58–3.80)	1.79 (0.85–3.76)	1.15 (0.53–2.49)

^a Each model included all four medical skepticism questions and was adjusted for age, sex, ethnicity, education, marital status, living in the South, supplemental insurance, poverty status and chronic health conditions