

Complementary Therapy Use and Health Self-Management Among Rural Older Adults

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Objectives. This article describes dimensions of complementary therapy use among rural older adults, employs these dimensions to delineate sets of complementary therapy use, and describes the personal characteristics related to each set of complementary therapy use.

Methods. Data are from in-depth interviews conducted with 62 African American and White rural older adults.

Results. Three dimensions of complementary therapy use are delineated: types of therapies used, mindfulness in therapy use, and sharing information with conventional health care providers. The intersection of these dimensions indicates 5 patterned sets of complementary therapy use among rural older adults: (a) mindful use of only home remedies; (b) mindful use of home remedies and contemporary supplements; (c) mindful use of home remedies, contemporary supplements, and complementary practices; (d) nonmindful use of home remedies and contemporary supplements; and (e) use of conventional care only. Involvement in the 5 sets of therapy use is related to sex, ethnicity, educational attainment, and migration.

Discussion. Understanding how older adults include sets of complementary therapies in their health self-management is important for improving their health care resources, expectations, awareness, and priorities.

Key Words: Complementary and alternative medicine—Health disparities—Health self-management—Minority aging—Rural aging.

THE health self-management of older adults is important for their well-being (Clark et al., 2008). Health self-management includes provider and patient behaviors—self-care, informal support, formal support, and medical care—intended for illness treatment and health maintenance (Ory, DeFriese, & Duncker, 1998). Older adults often integrate complementary therapies into their health self-management regimens, whether as self-care behaviors or informal support (e.g., taking herbs or supplements), formal support (e.g., participating in Tai Chi classes), or medical care (e.g., receiving care from naturopathic physicians; Arcury, Bell, et al., 2006; Arcury et al., 2007).

The National Center for Complementary and Alternative Medicine (2004) differentiates five domains of complementary therapies: alternative medical systems, biologically based therapies, manipulative and body-based practices, mind–body therapies, and energy medicine. The 2002 National Health Interview Survey shows that the majority of older adults include prayer for health within their health behaviors (Barnes, Powell-Griner, McFann, & Nahin, 2004). Many older adults use biologically based complementary therapies (15.6%), particularly herbs and supplements, and mind–body therapies (11.7%; Arcury, Suerken, et al., 2006). Some older adults use manipulative therapies (7.6%), such as chiropractic and massage; however, few older adults use

alternative medical systems (1.4%) or energy-based therapies (0.3%). Based on data from patients participating in a trial testing the efficacy of *Ginkgo biloba*, Nahin and colleagues (2006) showed that 27.4% of older adults use some type of nonvitamin or nonmineral dietary supplement (largely herbs), whereas 59.4% use a multivitamin and 66.6% at least one individual vitamin or mineral.

Similar to the entire U.S. adult population, personal characteristics of older adults are associated with the use of complementary therapies. For example, the 2002 National Health Interview Survey (Arcury, Suerken, et al., 2006) indicates that Asian American and Hispanic elders use complementary therapies more than African American or White elders, that women use these therapies more than men, and that the use of these therapies is maintained at relatively high levels among those aged 65–74 years, but their use declines with increasing age. Regional differences are also present, with more older adults in the West than in the Midwest, Northeast, and South using these therapies. Having a chronic disease increases the use of complementary therapies (Saydah & Eberhardt, 2006), but this complementary therapy use is not always for the chronic disease (Bell et al., 2006). Results from the 2002 National Health Interview Survey are somewhat contradictory in the association of complementary therapy use with conventional medical

Table 1. Type and Number of Sites at Which Participants Were Recruited

| Type of Site | No. of Sites | No. of Participants |
|------------------------------------------------|--------------|---------------------|
| Congregate meal site | 4 | 12 |
| Home-delivered meal program | 2 | 2 |
| Senior housing site | 2 | 4 |
| Senior center, senior club, senior craft group | 4 | 18 |
| Local AARP affiliate | 1 | 3 |
| Red Cross chapter | 1 | 2 |
| Church | 3 | 4 |
| County social service program | 3 | 7 |
| County health department program | 3 | 4 |
| Fast food restaurant | 1 | 1 |
| Other research project | 2 | 5 |
| Total | 26 | 62 |

care use; Pagán and Pauly (2005) report that those who use complementary therapies may delay their use of conventional medical care, whereas Grzywacz and colleagues (2008) found that those who use complementary therapies are greater users of conventional care.

Although understanding how older adults use complementary therapies in health self-management is expanding, several areas have not yet been addressed. Research has not delineated the sets of complementary therapies that older adults include in their health self-management regimens; most research examines the use of specific complementary therapies or of any therapy. Therefore, knowledge is limited as to whether older adults use only specific kinds of complementary therapies in managing their health, or if they use multiple complementary therapies. Further, research has not determined whether the use of different sets of complementary therapies is patterned. Delineating the sets of complementary therapies used by older adults is essential to a complete understanding of their health self-management regimens (Stoller, Pollow, & Forster, 1994). Understanding whether older adults use sets of complementary therapies is important because these sets would reflect basic health behaviors, and they may affect immediate and long-term health status.

This analysis uses a qualitative research design based on in-depth interviews with African American and White rural older adults to address three aims. First, it describes dimensions of complementary therapy use among older adults, including the types of complementary therapies they use, their mindfulness in the use of complementary therapies, and their communication about the use of complementary therapies with their conventional health care provider. Second, it employs these dimensions to delineate sets of complementary therapy use among older adults. Third, it describes the characteristics of rural older adults associated with each set of complementary therapy use.

We focus on the complementary therapy use of rural older adults for several reasons. Little is known about the use of complementary therapies among rural older adults.

Although rural elders make up about 25% of the total U.S. elderly population, they are often only small parts of national survey samples of complementary therapy use, and these studies seldom examine rural–urban differences. Only a few regional studies have examined the complementary therapy use of rural older adults (e.g., Schoenberg, Stoller, Kart, Perzynski, & Chapleski, 2004; Shreffler-Grant, Hill, Weinert, Nichols, & Ide, 2007). At the same time, the use of health care by rural older adults occurs in a context that is far different from that of older adults who live in urban and suburban communities (Krout & Bull, 2006). Many rural older adults grew to adulthood in communities with limited access to formal health care and without resources to pay for formal care when it was available (Gesler, Hartwell, Ricketts, & Rosenberg, 1992). They often rely on local knowledge to treat illness and injury. Although primary care has become far more available in rural communities, specialty care remains limited (Bell et al., 2005; Onega et al., 2008). Transportation to conventional health care remains a problem in most rural communities (Arcury, Preisser, Gesler, & Powers, 2005).

METHODS

Sample

Participants were recruited from three rural south-central North Carolina counties selected because they included large minority populations. These counties also represent variation on the urban–rural continuum (<http://www.ers.usda.gov/Data/RuralUrbanContinuumCodes/2003/>) such that one is in a metropolitan area with an urban population of 2,500–19,999, one is a nonmetropolitan county with an urban population of 20,000 or more, and one is a nonmetropolitan county with an urban population of 2,500–19,999.

The sample was designed to recruit 60 participants with equal numbers of African American and White women and men (15 in each cell). A site-based procedure (Arcury & Quandt, 1999) was used to implement an ethnographic sample design to recruit representative participants who reflect the range of knowledge, beliefs, and practices in a community (Werner & Bernard, 1994). Sites are places, organizations, or services used by members of the population of interest. We recruited participants from 26 sites across the study counties that served different ethnic and social groups (Table 1). In addition to recruiting participants from numerous sites in the counties, and ensuring an approximately equal distribution by sex and ethnic group, attention was paid to participants' educational attainment and migration history in recruitment.

Data Collection

Data collection was completed from February through October 2007 by five trained interviewers, including the lead author. Interviewers met participants at a location of

the participants' choice, usually their homes, explained the project, and obtained signed informed consent. Participants received a small incentive (\$10) at the end of the interview. In-depth tape-recorded interviews ranged in length from about 1 to 3 hr. Data collection procedures were approved by the Wake Forest University School of Medicine Institutional Review Board.

Interview Content

The interview incorporated different approaches to elicit use of complementary therapies and beliefs surrounding the use of complementary therapies. First, participants were asked how they would treat common symptoms in ways other than going to a doctor or using medicines prescribed by a doctor. Common symptoms included headache, dizziness, toothache, rash, sunburn, nausea, constipation, diarrhea, cramps, muscle ache, sore throat, runny nose, nervousness or moodiness, and fatigue, as well as others. Second, participants were asked about remedies and treatments people might use to treat a set of chronic conditions and diseases "that they do not get from their regular doctors." These chronic conditions and diseases included arthritis, emphysema, bronchitis, asthma, cancer, high blood pressure, heart disease, diabetes, memory problems, and stroke. Third, participants were presented with common household products, herbs, and over-the-counter medicine that might be used as remedies and tonics, and for each they were asked if they ever used it, if they currently used it, if they had heard of other people using it, and for what it was used. This list included common household products that our pretest interviews and existing literature had documented are used by older adults (Arcury, Suerken, et al., 2006; Grzywacz et al., 2006), such as vinegar, honey, baking soda, Epson salts, and kerosene. It included herbs commonly used by White and African American older adults (Arcury et al., 2007), as well as widely used over-the-counter medicine and commercial supplements (Arcury, Suerken, et al., 2006), such as Ben Gay ointment, Raleigh's liniment, Vicks Vaporub, and glucosamine sulfate. Fourth, participants were presented with practices that are commonly included within the domain of complementary therapies and asked if they had heard of any of the practices, if they used any of the practices, and the purpose for which they used any of the practices. The practices included relaxation, meditation, biofeedback, yoga, special diets, massage, acupuncture, and self-help groups. Fifth, participants were presented with a list of complementary practitioners and asked if they had heard of any of the practitioners, if they used any of the practitioners, and the purpose for which they used any of the practitioners. The practitioners included chiropractor, homeopathic doctor, naturopathic doctor, massage therapist, nutritional consultant, folk healer, and spiritual healer.

Finally, interview items addressed whether and when people in their communities discussed their health and illnesses,

remedies that were not prescribed by a doctor, and practices and practitioners other than a regular doctor. Participants were asked the circumstances under which they would try a remedy not prescribed by a doctor. Questions included, "How do you decide when to use [specific therapy], versus a remedy you buy at the store, versus a remedy from the doctor, versus going to the doctor?" and "If [your child/family members/friend/church member/neighbor] suggested that you use [specific therapy], what would you do?"

Analysis

Data analysis was based on a systematic computer-assisted approach (Arcury & Quandt, 1998). All interviews were transcribed verbatim, and each transcript was edited for accuracy. Data analysis began with the collection and ongoing reflection on interview content through listening to interview recordings and reading the interview transcripts. Analysis proceeded in three stages: (a) the construction of cases summarizing the complementary therapy use of each participant, (b) the delineation of dimensions of complementary therapy use across the individual cases, and (c) the determination of sets of complementary therapy use.

Construction of cases summarizing the complementary therapy use of each participant was an iterative process. Initial case summaries were developed for each participant, and based on these, a preliminary set of characteristics for different types of complementary therapy use was developed. A coding dictionary was also constructed from the initial transcript review and case summaries. Each transcript was then reviewed and coded by one member of the project team. At the end of coding, the initial case summaries were reviewed and revised by the project team member who coded the transcript. A second project team member then reviewed the coded transcript and suggested revisions to the coding and the case summary.

For the delineation of dimensions of complementary therapy use across the individual cases, the principal author reviewed each of the case summaries and read the original transcripts for dialogue that supported the use of complementary therapies and beliefs about the use of complementary therapies. Similarities and differences across the cases were summarized. In determining the sets of complementary therapy use, patterns in the co-occurrence of themes were noted. Interview quotations supporting the interpretation of textual data are presented with participant ID number and interview line number, as well as participant ethnicity and gender.

RESULTS

Characteristics of Participants

Participants included 62 older adults aged 65 and older: 17 African American women, 14 African American men, 15 White women, and 16 White men. Participants ranged in

age from 65 to 92 years, with 21 aged 65–69 years, 15 aged 70–74 years, 13 aged 75–79 years, and 13 aged 80 years and older. Most participants (27) had a high school education, with 19 having less than high school and 16 having greater than high school. Finally, half (31) of the participants had lived in south-central North Carolina all of their lives. Twenty-two were return migrants; originally from south-central North Carolina, they had moved to other areas, including large cities in North Carolina, cities in other regions such as New York City and Philadelphia, or other countries, before returning to their natal communities. Nine of the participants had migrated to south-central North Carolina as adults.

Dimensions of Complementary Therapy Usage

Three dimensions are apparent in the use of complementary therapies for health self-management among older adults in rural North Carolina. The first dimension is the types of therapies used; these therapies include home remedies, contemporary supplements, and complementary practices. The second dimension is the degree to which older adults are mindful in their use of complementary therapies, are active in learning about complementary therapies, and are active in transferring information about complementary therapies. The third dimension is the degree to which older adults share information about the use of complementary therapies with their conventional health care providers, such as allopathic physicians.

Therapies used.—All the rural older adults receive care from conventional physicians. They also use over-the-counter medicines as directed on the product labels. For example, they take aspirin orally to treat a headache, and they rub a liniment on the skin to treat muscle ache. Although some limit their self-care behaviors to over-the-counter medicine, in addition many older adults use home remedies, contemporary supplements, and complementary practices as part of their health self-management regimens.

Home remedies used by rural older adults consist of materials that are readily available in most homes, including common foods, common household products, and local herbs.

I: How about if you had pain or burning when you urinated, what would you use for that?

R: Let me see, what did our grandmother used to do, give to us? I tell you what she would do. You know, [of] course you might not know about the wood stove, and the eggshells, my grandmother throwed them eggshells back on the back of the stove and she would take those shells and she would parch the insides of them and this here was good for women's body pains. . . . That was good if you had puss on your ovaries. . . . (CAM029:173; African American woman)

R: Just take a gauze, a piece of gauze, a cloth, and saturate it with vanilla and put it right to their tooth if it's an open tooth and put it down in there. (CAN007:150; White man)

Home remedies also include the off-label use of over-the-counter medicines, such as Vicks Vaporub rubbed on the forehead to treat a headache or on feet to treat fungus, or aspirin crushed and packed into a cavity to treat a toothache.

R: And I try to keep some Vaseline and some Vicks salve with me. But I'm out now. The Vicks salve is good for fungus, athlete foot, it's good for that. I've used that, and I know for certain that it is. (CAM001:519; African American woman)

Older adults learned about the use of these home remedies from older relatives, friends, and neighbors.

I: Could you first tell me about the vinegar? Where did you learn about that?

R: . . . [W]hen my father farmed he didn't have a whole lot of money to take us to the doctor and when something would happen like her blood pressure would go up, she had pressure, too. People would tell us to use vinegar when my mother was living. Now, I still use it. (CAM003:063; African American woman)

In addition to home remedies, some older adults use contemporary supplements. These contemporary supplements include herbs (e.g., *Echinacea*) and animal products (e.g., shark cartilage), as well as vitamins and minerals. All these products are purchased to treat specific symptoms and conditions or to prevent illness. Most are in pill form, although some can be brewed as teas. They are purchased at local stores and from vendors on the Internet.

I: What places or stores are there in this area where you can go and get those things?

R: There's a GNC store and Walmart you know, the pharmaceutical department has a lot of vitamins and supplements too. (CAM041:537; White woman)

Older adults who use contemporary supplements often have books, magazines, and pamphlets to which they refer when discussing health and supplement use. They try to learn more about remedies, seeking more information through the Internet and print materials. They have several bottles containing capsules and pills with vitamins, minerals, herbs, and other supplements.

I: How did you use the cayenne pepper?

R: I put it on everything I eat. Everything, and they do have cayenne pepper capsules. You can take it like a capsule but I'd rather eat it on my food because I love it.

I: Um-hum, and you took that for high blood pressure? How do you think that helped your blood pressure, do you know anything about that?

R: Well, the way I think it helped, from what I was reading, it stimulates your heart and keeps your blood flowing and all that. I guess it just kept it down that way. I'm not quite so sure. I have a lot of books about it, but I just can't remember what I read. (CAM047:052; African American woman)

I: When did you start reading about vitamins and herbs?

R: Well, I've been reading about them off and on whenever I find a book to read about them, but I never started to taking any vitamins until about, I'd say, about five years ago.

I: How about herbs, when did you start taking herbs?

R: Whenever I started reading about them and found out that there were some that would help the things that I've got. (CAM033:094; White woman)

A few rural older adults use complementary practices, including care from naturopathic or homeopathic physicians, acupuncture, or massage therapy. Like those who use contemporary supplements, older adults who use complementary practices have learned about these practices from reading print and Internet materials.

I: Is there any particular type of massage that you think would work best to try to relax?

R: I do, I mean I have someone that I use periodically and she does deep tissue massage and that works for me because when I begin to have muscle problems it comes from sometimes an injury, however slight it might be, or it comes from the fact that I have overdone and my back is giving me problems and I've changed my gait, I've changed the way I sit, changed the way I, you know. . . . And it takes a bit to get to the root of the problem. But she is very good at doing that. Yeah, deep tissue massage works. Reflexology is something that I have participated in and I find that very relaxing. Once you get through it. (CAM045:104; White woman)

Mindfulness of therapies used.—Older adults vary in being mindful in their use of complementary therapies, learning about complementary therapies, and telling others about complementary therapies. Many of the older adults who use home remedies, contemporary supplements, and complementary practices are very mindful about this use, which they freely, immediately, and openly discuss in the interview setting. They are eager to talk about complementary therapies and to show the bottles of different supplements that they use. Many spend time learning about complementary therapies through print and Internet materials. Some spend time telling and teaching others about complementary therapies.

R: Yes . . . I got a niece that she's the principal over here at [name] High and she said, "Aunt [name] I just have so many hot flashes I can't hardly stand it." I said, "Well, get you some sage and some sugar and put it in a bag and put it under your tongue . . . and let it dissolve. . . ." (CAM029:486; African American woman)

Other older adults who use complementary therapies, specifically home remedies and contemporary supplements, are not mindful of this use. These elders would seldom respond that they use home remedies or contemporary supplements during the early sections of the interview when they were asked how they would treat specific symptoms or chronic conditions. However, as the interview progressed and they were asked about specific complementary therapies, these elders would discuss various complementary therapies they used. One African American man (CAM015) is an example of a user of complementary therapies who is

not mindful of this use. When the interviewer reviewed the lists of symptoms and chronic conditions, the participant would discuss the use of only over-the-counter and prescription medicines. At the end of the questions that asked about treating symptoms and chronic conditions, the interviewer asked a summarizing question:

I: So it seems to me that you would go to the doctor for things or you would use over-the-counter medicines for most symptoms?

R: Yeah, I'd use over-the-counter medicines for things that I knew about. Like a cold or something like that, you know, we always did take little over-the-counter stuff for colds. So I'd do that if I had a cold. Unless it got real severe, you know, then I'd take off to the doctor. But just ordinarily I'd, you know, use over-the-counter stuff. But anything serious, like in your body, like pain in your chest or in your side, around your heart, all in there, I wouldn't play around with that stuff. . . . (240)

The interviewer followed this response with a direct question:

I: But for just everyday symptoms like headaches or a cold, you're going to use over-the-counter. Do you ever consider using home remedies?

R: If I knew of some home remedies. Now (laughs) when I was coming along, the old folks knew something about what to get, 'cause you know, we didn't go to no doctor. . . . (242)

Although the participant denied that he used or knew about home remedies, the next questions reveal that he has used contemporary supplements and home remedies.

I: Do you ever take a tonic?

R: No. I used to take—no, I never take no tonic. I take pills, I used to take pills.

I: What kind of pills?

R: Ah . . . oh, it's been 5 or 6 years ago now, I used to take aloe vera pill, when they first came out, folks was telling me, oh, aloe vera, aloe vera, aloe vera, aloe vera. I said, "Well, I'm gonna get me some." And I'd take them, and I took them and took them and took them for years. I couldn't really tell it was doing any good. . . .

I: Other than aloe vera, what else did you take?

R: Gitsen.

I: Ginseng?

R: Yeah. I took that. That's the only two I took. . . . (246)

I: Have you ever used any other tonic, like some people drink vinegar every day, some vinegar every day, anything like that?

R: Ah, yeah, I take a swallow of vinegar. Not every day, but I take a swallow whenever, if I eat a lot of something that I think is a little salty. You know, salt has a tendency to run your blood pressure up, and if I think I ate a little bit over, went a little bit overboard eating something with a little bit more salt in it than it should have, I take a teaspoon or two of white vinegar, because they always told me, my daddy, this is coming from the old folks too, they always told me vinegar would reduce the blood pressure, would lower your blood pressure down. So I take vinegar for that. (258)

Other older adults do not use any complementary therapies. They do not know much about them and they seldom think about them.

Sharing information with health care providers.—Older adults vary in sharing information about use of complementary therapies with conventional health care providers. Those who do not use any complementary therapies have no information to share with their conventional health care providers. Those who use complementary therapies but who are not mindful about this do not discuss these therapies with their conventional health care providers—they just do not think about it.

Older adults who use complementary therapies and who are mindful about their use vary in their willingness to discuss the use of these therapies with conventional health care providers. Most do not talk to conventional health care providers about their use of complementary therapies, particularly home remedies.

I: Why don't you tell your doctor [that you use home remedies]?

R: Because they would disagree with it.

I: Why do you think they would disagree?

R: Because if you do all they tell you, you're taking one thing, let them know and don't take something else. He'll tell you that, "Take one thing, don't take something else." No home remedy I've ever used have never give no problem with the doctor medicine. I never had no problem with it. (CAM065:414; African American man)

I: Okay, when you use remedies or tonics, what do you tell your regular doctor?

R: I don't tell him anything. That's just me treating a particular symptom. I don't tell him anything about that. (CAM053:494; African American man)

However, other older adults do discuss their use of complementary therapies, particularly contemporary practices, with their conventional physician.

I: And you said that you tell your doctor the sort of things you do?

R: Yes I do. I have a doctor that's very open minded. (CAM045:048; White woman)

Sets of Complementary Therapy Use for Health Self-Management Among Older Adults in Rural North Carolina

The intersection of the three dimensions leads to the delineation of five sets of complementary therapy use for health self-management among rural older adults: (a) mindful use of only home remedies; (b) mindful use of home remedies and contemporary supplements; (c) mindful use of home remedies, contemporary supplements, and complementary practices; (d) nonmindful use of home remedies and contemporary supplements; and (e) use of conventional care only.

Mindful use of home remedies includes the use of self-administered complementary therapies that are prepared from materials that are readily available in the home, including common foods, such as vinegar and honey; common household products, such as Epsom salts, turpentine, and kerosene; and herbs produced in home gardens or picked wild. Those using these home remedies think about their use, try to learn more about their use, and often try to teach others about their use. Use of these home remedies generally is not discussed with conventional providers.

Mindful use of home remedies and contemporary supplements includes the use of commercially prepared herbs, nutritional supplements, and other supplements (e.g., shark cartilage) that are purchased, generally in the form of pills and capsules, as well as the use of home remedies. Those using these home remedies and contemporary supplements think about their use, try to learn more about their use, and often try to teach others about their use. Use of these complementary therapies generally is not discussed with conventional providers.

Mindful use of complementary practices includes the use of therapies provided by others, including care from naturopathic or homeopathic physicians, acupuncture, or massage therapy. The use of complementary practices is coordinated with the use of home remedies and contemporary supplements. Those using complementary practices, home remedies, and contemporary supplements think about their use, try to learn more about their use, and often try to teach others about their use. Use of these complementary therapies is often discussed with conventional providers.

The nonmindful use of home remedies and contemporary supplements indicates that although home remedies and contemporary supplements are used, this use is not intentional. These individuals do not think about their use of complementary therapies or try to learn more about these therapies. They generally do not think about telling their conventional providers about the use of home remedies or contemporary supplements. Remedies are independent events; they are not part of a health knowledge or belief system.

Use of only conventional care indicates that the older adult denies the use of any therapy not recommended by a conventional health care provider. These older adults are adamant that the only care they receive is from a conventional physician, and the only remedies they use are those prescribed by a physician. Because they do not use complementary therapies, they have no need to discuss these with their conventional health care provider.

Associations of Personal Characteristics With the Complementary Therapy Sets

Greater percentages of women are mindful users of only home remedies (31.3%), of home remedies and contemporary therapies (18.8%), and of home remedies, contemporary

Table 2. Sets of Complementary Therapy Use by Participant Sex, Ethnicity, Education, and Migration Status

| Participant Characteristics | Mindful Use of Only Home Remedies, <i>n</i> = 15 | | Mindful Use of Home Remedies and Contemporary Supplements, <i>n</i> = 7 | | Mindful Use of Home Remedies, Contemporary Supplements, and Complementary Practices, <i>n</i> = 6 | | Nonmindful Use of Home Remedies and Contemporary Supplements, <i>n</i> = 22 | | Use of Conventional Care Only, <i>n</i> = 12 | | Total, <i>N</i> = 62 | |
|-----------------------------|--------------------------------------------------|------|-------------------------------------------------------------------------|------|---------------------------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------|------|----------------------------------------------|------|----------------------|--------|
| | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % |
| Sex | | | | | | | | | | | | |
| Female | 10 | 31.3 | 6 | 18.8 | 4 | 12.5 | 9 | 28.1 | 3 | 9.4 | 32 | 100.00 |
| Male | 5 | 16.7 | 1 | 3.3 | 2 | 6.7 | 13 | 43.3 | 9 | 30.0 | 30 | 100.00 |
| Ethnicity | | | | | | | | | | | | |
| African American | 12 | 38.7 | 4 | 12.9 | 1 | 3.2 | 11 | 35.5 | 3 | 9.6 | 31 | 100.00 |
| White | 3 | 9.6 | 3 | 9.6 | 5 | 16.1 | 11 | 35.5 | 9 | 29.0 | 31 | 100.00 |
| Education | | | | | | | | | | | | |
| Less than high school | 8 | 42.1 | 3 | 15.8 | 0 | 0 | 7 | 36.8 | 1 | 5.2 | 19 | 100.00 |
| High school | 6 | 22.2 | 2 | 7.4 | 3 | 11.1 | 11 | 40.7 | 5 | 18.5 | 27 | 100.00 |
| Greater than high school | 1 | 6.3 | 2 | 12.5 | 3 | 18.8 | 4 | 25.0 | 6 | 37.5 | 16 | 100.00 |
| Migration | | | | | | | | | | | | |
| Nonmigrant | 11 | 35.5 | 2 | 6.45 | 0 | 0 | 13 | 41.9 | 5 | 16.1 | 31 | 100.00 |
| Return migrant | 4 | 18.2 | 3 | 13.6 | 4 | 18.2 | 5 | 22.7 | 6 | 27.3 | 22 | 100.00 |
| In-migrant | 0 | 0 | 2 | 22.2 | 2 | 22.2 | 4 | 44.4 | 1 | 11.1 | 9 | 100.00 |

supplements, and complementary practices (12.5%) than are men, whereas greater percentages of men are nonmindful users of home remedies and contemporary supplements (43.3%) and use conventional care only (30.0%; Table 2). More African American (38.7%) than White (9.6%) elders are mindful users of only home remedies, whereas more White elders (16.1%) are mindful users of home remedies, contemporary supplements, and complementary practices, and users of conventional care only (29.0%).

Older adults with lower educational attainment are mindful users of home remedies only: 42.1% of those with less than a high school education and 22.2% of those with a high school education mindfully use only home remedies. More participants with greater than a high school education are mindful users of home remedies, contemporary supplements, and complementary practices (18.8%), and are conventional care-only users (37.5%).

More than one third of nonmigrants and almost one fifth of return migrants are mindful home remedy-only users; none of the in-migrants use only home remedies. More than one fifth of in-migrants are mindful users of home remedies and contemporary supplements; and another one fifth are mindful users of home remedies, contemporary supplements, and complementary practices. Almost one fifth of return migrants are mindful users of home remedies, contemporary supplements, and complementary practices.

DISCUSSION

Understanding how older adults include different health care practices in their health self-management regimens is important for improving their health care resources, expectations, awareness, and priorities (Clark et al., 2008). We have previously indicated that it is important to differentiate factors related to the use of specific complementary thera-

pies, as distinct modalities likely have different behavioral, sociocultural, and cognitive antecedents (Arcury et al., 2007). It is equally important to understand how older adults combine different types of complementary therapies within a health self-management regimen, as a specific complementary therapy is seldom used in isolation from other complementary therapies or other components of health self-management.

We delineate five patterned sets of complementary therapy use for health self-management among rural older adults. The determination of these five sets of complementary therapy use is based on the intersection of three dimensions in the use of complementary therapies: types of therapies used, mindfulness in therapy use, and sharing information about therapy use with conventional health care providers.

The older adults who participated in this study included care from conventional health care providers in their health self-management regimens. These older adults were not involved in alternative medical systems—such as Traditional Chinese Medicine or Ayurvedic medicine—that replace the use of conventional allopathic medicine. Although participants gave examples of limited substitution of complementary therapies for conventional medical care, for example, substituting vinegar for hypertension prescription medicine for 1 month, they seldom totally substitute complementary therapies for the use of conventional medical care. They also included over-the-counter medicine used as indicated on the label in their health self-management regimens.

Most of these older adults included home remedies in their health self-management regimens, many included contemporary supplements, and a few included complementary practices. We find in the discussions of these older adults three dimensions that differentiate how complementary therapies are integrated into self-management. The types of

complementary therapies older adults use are an important, but not the sole, dimension that differentiates their set of complementary therapy use. The mindfulness that older adults have in their use of complementary therapies is important to health self-management. Those who are mindful are active in searching for information about their health and applying this information to their health self-management. Not surprisingly, women dominate this group. Some analysts have posited that the use of complementary therapies reflects a holistic health worldview (e.g., Astin, 1998). These results provide some support for this position. The mindful complementary therapy users are looking for greater control of their health beyond conventional medicine, and most are using the resources available to them, including the Internet, to learn more about their health. Several of the participants, even those with low incomes, had computer and Internet connections that could be observed in their homes. Public libraries in each of the counties provide access to computers with Internet connections at no charge to users. These computers are intensively used.

In contrast, the nonmindful still include complementary therapies in their health self-management, and the level of complementary therapy use that they include can be extensive. Participant CAM015, an African American man whom we quote extensively, is an example of a nonmindful user of complementary therapies whose use was wide ranging in the number of therapies used and the number of years in which he used them. However, these individuals are not investing in learning about health or how specific therapies might affect their health. They are using remedies by rote that their parents used or by suggestion that their neighbors use. This nonmindful and often random use of complementary therapies makes helping older adults improve their health self-management challenging.

Survey data generally indicate that those who use complementary therapies also use conventional health care, often at higher levels than those who do not use complementary therapies (Eisenberg et al., 1993; Grzywacz et al., 2008). At the same time, such data generally indicate that those who use complementary therapies do not tell their conventional care providers (Eisenberg et al., 1993). The lack of discussion with conventional health care providers affects health self-management. We are not as much concerned here about the interactions of complementary therapies with prescription medicines as we are with health disparities of those who do not feel they can and should discuss their health self-management with their conventional health care providers. For example, Clark and colleagues (2008) find that the most socioeconomically vulnerable older adults are the least likely to discuss health self-management with their conventional health care providers. The most socioeconomically vulnerable older adults in this study are the least likely to discuss their use of complementary therapies with their conventional health care providers; they are nonmigrant African American women with less than a high school

education. Those older adults who use complementary practices are the most likely to discuss complementary therapy with their conventional health care providers; these individuals are generally White, have a high school education or greater, and are return migrants or in-migrants.

This analysis focused on the use of complementary therapies among older adults who live in rural communities. This focus is based on historical differences in access to conventional health services in rural communities, and contemporary differences in the health care system of most rural communities compared with urban and suburban communities. At the same time, we find that only about half of these older adults are lifelong residents of rural communities. More than one third are return migrants, and about 15% are in-migrants who have been exposed to health care systems in metropolitan regions. Older adults in rural communities still have limited access to specialty conventional care (Bell et al., 2005; Onega et al., 2008). The interviews also indicate that these rural older adults have limited access to contemporary supplements and practices that they wish to use. Further, the characteristics of those involved in each set of complementary therapy use differ. The most prevalent sets of complementary therapy use among the “most rural” of the participants, those who had not migrated from the region, are mindful use of home remedies and nonmindful use of home remedies and contemporary supplements. Return migrants and in-migrants dominate in the mindful use of home remedies and contemporary supplements, and the mindful use of home remedies, contemporary supplements, and contemporary practices. This rural–urban difference in access to complementary therapies deserves further investigation.

Limitations

This analysis reflects the limitations of qualitative analyses. Participants, although representative, were not selected randomly. Not being a random sample, statistics are not applied to test for differences, even when data, as in Table 2, allow for counts. However, with 62 participants, the sample is relatively large for a qualitative analysis. Procedures included recruiting participants from diverse sites in the counties to constitute a diverse, representative sample. Finally, the systematic approach to text analysis improves the validity and reliability of the results.

Conclusions

The complementary therapies that rural older adults include in their health self-management regimens are not independent events. The use of complementary therapies is patterned. These patterned sets of complementary therapy use give greater insight than a focus on individual remedies to the decisions older adults make in managing their health and their incorporation of different behaviors into their health self-management regimens.

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REFERENCES

- Arcury, T. A., Bell, R. A., Snively, B. M., Smith, S. L., Skelly, A. H., Wetmore, L. K., et al. (2006). Complementary and alternative medicine use as health self-management: Rural older adults with diabetes. *Journals of Gerontology: Social Sciences, 61*, S62–S70.
- Arcury, T. A., Grzywacz, J. G., Bell, R. A., Neiberg, R. H., Lang, W., & Quandt, S. A. (2007). Herbal remedy use as health self-management among older adults. *Journals of Gerontology: Social Sciences, 62*, S142–S149.
- Arcury, T. A., Preisser, J. S., Jr., Gesler, W. M., & Powers, J. M. (2005). Access to transportation and health care utilization in a rural region. *Journal of Rural Health, 21*, 31–38.
- Arcury, T. A., & Quandt, S. A. (1998). Qualitative methods in arthritis research. Sampling and data analysis. *Arthritis Care and Research, 11*, 66–74.
- Arcury, T. A., & Quandt, S. A. (1999). Participant recruitment for qualitative research: A site-based approach to community research in complex societies. *Human Organization, 58*, 128–133.
- Arcury, T. A., Suerken, C. K., Grzywacz, J. G., Bell, R. A., Lang, W., & Quandt, S. A. (2006). Complementary and alternative medicine use among older adults: Ethnic variation. *Ethnicity & Disease, 16*, 723–731.
- Astin, J. A. (1998). Why patients use alternative medicine: Results from a national study. *Journal of the American Medical Association, 279*, 1548–1553.
- Barnes, P. M., Powell-Griner, E., McFann, K., & Nahin, R. L. (2004). *Complementary and alternative medicine use among adults: United States, 2002. Advance Data from Vital and Health Statistics Number 343*. Hyattsville, MD: National Center for Health Statistics.
- Bell, R. A., Quandt, S. A., Arcury, T. A., Snively, B. M., Stafford, J. M., Smith, S. L., et al. (2005). Primary and specialty medical care among ethnically diverse, older rural adults with type 2 diabetes: The ELDER Diabetes Study. *Journal of Rural Health, 21*, 198–205.
- Bell, R. A., Suerken, C. K., Grzywacz, J. G., Lang, W., Quandt, S. A., & Arcury, T. A. (2006). Complementary and alternative medicine use among adults with diabetes in the United States. *Alternative Therapies in Health and Medicine, 12*, 16–22.
- Clark, D. O., Frankel, R. M., Morgan, D. L., Ricketts, G., Blair, M. J., Nyland, K. A., et al. (2008). The meaning and significance of self-management among socioeconomically vulnerable older adults. *Journals of Gerontology: Social Sciences, 63*, S312–S319.
- Eisenberg, D. M., Kessler, R. C., Foster, C., Norlock, F. E., Calkins, D. R., & Delbanco, T. L. (1993). Unconventional medicine in the United States. Prevalence, costs, and patterns of use. *New England Journal of Medicine, 328*, 246–252.
- Gesler, W. M., Hartwell, S., Ricketts, T. C., & Rosenberg, M. K. (1992). Introduction. In W. M. Gesler & T. C. Ricketts (Eds.), *Health in rural North America: The geography of health care services and delivery* (pp. 1–22). New Brunswick, NJ: Rutgers University Press.
- Grzywacz, J. G., Arcury, T. A., Bell, R. A., Lang, W., Suerken, C., Smith, S. L., et al. (2006). Ethnic differences in elders' home remedy use: Sociostructural explanations. *American Journal of Health Behavior, 30*, 39–50.
- Grzywacz, J. G., Quandt, S. A., Neiberg, R., Lang, W., Bell, R. A., & Arcury, T. A. (2008). Age-related differences in the conventional health care–complementary and alternative medicine link. *American Journal of Health Behavior, 32*, 650–663.
- Krout, J. A., & Bull, N. (2006). Service delivery to rural elders: Barriers and challenges. In R. T. Goins & J. A. Krout (Eds.), *Service delivery to rural older adults: Research, policy, and practice*. New York: Springer.
- Nahin, R. L., Fitzpatrick, A. L., Williamson, J. D., Burke, G. L., Dekosky, S. T., Furberg, C., et al. (2006). Use of herbal medicine and other dietary supplements in community-dwelling older people: Baseline data from the ginkgo evaluation of memory study. *Journal of the American Geriatrics Society, 54*, 1725–1735.
- National Center for Complementary and Alternative Medicine. (2004). *Expanding horizons of health care, strategic plan 2004–2009*. National Center for Complementary and Alternative Medicine (NIH Publication Number 04-5568). Washington, DC: U.S. Department of Health and Human Services, National Institutes of Health.
- Omega, T., Duell, E. J., Shi, X., Wang, D., Demidenko, E., & Goodman, D. (2008). Geographic access to cancer care in the U.S. *Cancer, 112*, 909–918.
- Ory, M. G., DeFries, G. H., & Duncker, A. P. (1998). Introduction: The nature, extent, and modifiability of self-care behaviors in later life. In M. G. Ory & G. H. DeFries (Eds.), *Self-care in later life: Research, program, and policy issues* (pp. 15–26). New York: Springer.
- Pagán, J. A., & Pauly, M. V. (2005). Access to conventional medical care and the use of complementary and alternative medicine. *Health Affairs, 24*, 255–262.
- Saydah, S. H., & Eberhardt, M. S. (2006). Use of complementary and alternative medicine among adults with chronic diseases: United States 2002. *Journal of Alternative and Complementary Medicine, 12*, 805–812.
- Schoenberg, N. E., Stoller, E. P., Kart, C. S., Perzynski, A., & Chapleski, E. E. (2004). Complementary and alternative medicine use among a multiethnic sample of older adults with diabetes. *Journal of Alternative and Complementary Medicine, 10*, 1061–1066.
- Shreffler-Grant, J., Hill, W., Weinert, C., Nichols, E., & Ide, B. (2007). Complementary therapy and older rural women: Who uses it and who does not? *Nursing Research, 56*, 28–33.
- Stoller, E. P., Pollow, R., & Forester, L. E. (1994). Older people's recommendations for treating symptoms: Repertoires of lay knowledge about disease. *Medical Care, 32*, 847–862.
- Werner, O., & Bernard, H. R. (1994). Short take 13: Ethnographic sampling. *Cultural Anthropology Methods, 6*, 7–9.

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