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Home on the Range—Health Literacy, Rural Elderly, Well-Being

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Abstract: *The demographic and socioeconomic impacts of the baby boomer generation turning 65 in 2011 will be magnified in rural areas where elderly are already disproportionately represented. The overall goal of a collaborative, community-based project was to improve the health literacy, health outcomes, and overall well-being of rural elderly in four small, rural communities. The methodology involved implementing four documented interventions working with Extension agents, senior center directors, librarians, and public health nurses in the communities. Extension can play a critical leadership role working with other key community stakeholders in improving health literacy, health and well-being of rural elderly.*

Introduction

Adults, 65 years and older, constitute the fastest growing segment of America's population. In rural settings, older adults are disproportionately represented, accounting for more than 15% in many areas, compared to 12.8% of the overall U.S. population (USDHHS, 2009). Beginning in 2011, the first of the nation's 75 million baby boomers will reach age 65, and by 2030 the elderly population will increase to 72 million, representing 20% of the population (Federal Interagency Forum on Aging, 2010). It is projected that baby boomer migration patterns will increase the population of rural and small-town settings (Cromartie & Nelson, 2009). This dramatic demographic change will create socioeconomic challenges across a number of domains: Social Security, housing, long-term care, health-care access, and health-care cost containment. These challenges will be magnified considerably in rural areas where elderly are disproportionately represented (Jones, Kandel, & Parker, 2007) and have a history of being in poorer health, with a higher incidence of chronic health conditions, and limited access to health care and preventive services (NRHA, 2008).

Montana, the fourth largest and least urbanized state, has less than a million residents and only seven cities numbering over 20,000 in population (Census and Economic Information Center, 2010). Approximately 80% of all Montana communities are small rural towns with populations of 2,000 or less (Census and Economic Information Center, 2010). Compounding this picture of rurality is the fact that Montana is aging at a faster rate than most other states. In 2008, elderly accounted for 14.2% of the state's population; however, in 16 out of Montana's 56 counties, elderly accounted for over 20% of the population (Haynes & Haraldson, 2010). It is estimated that by the year 2025, Montana will rank in the top five states for percentage of

elderly, with over 25% of the state's population 65 and older (Senior and Long Term Care Division, 2011).

It is well documented that older adults have health literacy problems. In the first national assessment of health literacy it was found that adults age 65 and older have the lowest health literacy scores, with only 3% measured as proficient (Kutner, Greenburg, Jin, & Paulsen, 2006). Health literacy is defined as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions" (IOM, 2004). Health literacy skills are foundational for meaningful health care decision-making, self-care management, and good health outcomes (IOM, 2009). Interestingly, the greatest predictor of a person's health outcome is not age, race, income, education, or socioeconomic status, but their level of health literacy.

Poor health literacy skills are frequently associated with poor self-care management, low use of preventative services, unhealthy behaviors, higher use of emergency room services, frequent hospitalizations, and poor health outcomes (Baker, Wolf, & Huang, 2007). In addition, nine out of 10 adults have difficulty using everyday health information presented by health care facilities, retail outlets, media, local communities, and other sources (IOM, 2004). In essence, low health literacy skills contribute to higher utilization of health care services, increasing annual health care expenditures by an estimated \$73 billion (National Academy on an Aging Society, 1999). Thus, national efforts to improve health literacy were noted in May 2010 in the *National Action Plan to Improve Health Literacy* (USDHHS, 2010b) and in December 2010 in the *Healthy People 2020* agenda (USDHHS, 2010a).

Improving health literacy of rural elderly living in small, geographically isolated Montana communities is challenging where Internet usage is low and availability of health information, health care, and community-based social services is limited (NRHA, 2008). In spite of the fact that Internet usage by rural elderly has increased from 12% in 2000 to 38% in 2008, it remains far below the national rate for all American adults of 79% (Taylor, 2010). Increasing quality Internet use and improving level of health literacy are key components for promoting better health and well-being of rural elderly. This article describes a project designed to improve the health literacy of rural elderly and build community health information capacity through four health-related interventions.

The major impetus for our project was the complexity of unmet needs and challenges facing rural elderly to improve their health literacy, health outcomes, and overall well-being. Many elderly have age-related changes that compromise their vision, hearing, and cognition, which adds to their difficulties in processing and using health information. Likewise, about 80% have at least one chronic health condition that can enhance difficulties with routine tasks of daily living (Centers for Disease Control and Prevention, 2009). Approximately three-fourths of adults need in-home care and rely on family members, friends, and volunteers as informal caregivers (Thompson, 2004). Caregivers often recognize that Web-based and mobile technologies can help them care for their loved ones and see that technology holds the power to help them save time, more easily manage the logistics of caregiving, feel more effective, reduce stress, and make their care recipient feel safer (National Alliance for Caregiving, 2011). Yet Internet usage in rural areas trails the national average by at least 11% (Horrigan & Smith, 2007).

The overall goal of the Health Enhancement for Rural Elderly (HERE) Project was to improve the health literacy and well-being of older adults living in rural/frontier areas of Montana. Supporting objectives were to: a) improve the level of health literacy and health-related decision-making; b) support and encourage improved personal responsibility for overall health care self-care management; and c) engage and empower family members, friends, and other community members with the knowledge and skills, for appropriate care/support services.

Methods

The four rural communities that participated in the HERE Project were selected from those engaged in an ongoing statewide initiative, the Horizons Program. This 18-month community-based leadership program, designed to reduce rural poverty, was funded by the Northwest Area Foundation through the Montana State University Extension Service. The HERE Project was announced to Horizons Community leaders in October 2008. Interested communities applied,

and four with a disproportionately high percentage of rural elderly in eastern Montana were selected (Table 1).

Table 1.
Participating Communities, Population, and Percent Elderly

Community	Population	% Elderly 65 & Over
Forsyth	1,857	17.4
Scobey	891	27.7
Terry	544	31.3
Wibaux	465	26.8
Montana	974,989	14.2
United States	307,006,550	12.8

The HERE Project was designed to be community-based and hubbed in local senior centers. Town Hall meetings were conducted by the HERE investigators in each of the four participating communities to introduce the older residents to the proposed activities. To enhance the health literacy skills, four interventions were used: a) My Health Companion© (MHC), b) hands-on instruction to increase computer skills, c) Powerful Tools for Caregivers (PTC), and d) five health information webinars.

My Health Companion©

A personal health record, such as the MHC, is a means for individuals to document key health information, enhance health literacy, have a better grasp of their own health information, make better informed health decisions, and interact more effectively with health care resources (Weinert, Kinion, & Cudney, 2010). Individuals at the Town Hall meetings who indicated an interest in using and evaluating the MHC were mailed an informed consent form, an initial questionnaire, and the opportunity to use the MHC for six months.

Powerful Tools for Caregivers

To help enhance health literacy, health, and well-being of the community, the HERE project employed the nationally recognized PTC program (Small, Cleland, & Sturdevant, 2000). A 2 ½-day workshop was hosted at a central geographic location, and three representatives from each community participated. Two Extension specialists who are PTC Master Trainers conducted the workshop focused on appropriate self-care for those involved in informal caregiving. Participants became certified PTC class leaders and received materials to conduct the workshop in their home communities.

Prescription for Success

To provide an opportunity to learn or enhance computer skills related to finding, evaluating, and using Internet-based health information, a hands-on workshop was scheduled in each of the four communities. These workshops were conducted by a highly trained Consumer Health Librarian from the National Network of Libraries of Medicine, Pacific Northwest Region (NN/LM, PNR). Older community residents received one-on-one instruction on finding and evaluating quality health information on the Internet. To help build local health information capacity and enhance the skills provided in the workshops, each senior center received a new computer, a new printer, key reference books on health information and caregiving, toll-free numbers for the National Library of Medicine, and the URL for the HERE website.

Health Information Webinars

During the course of the HERE Project in 2009, an opportunity arose to add a component that would further strengthen literacy for rural elders. This involved collaboration with the NN/LM PNR

and the Montana State University library. Five monthly webinars were broadcast to the four communities between February and June 2010. Webinar topics were selected with the intent to increase health literacy skills and were predominately focused on finding quality health-related information on the Internet. Each was conducted by a highly trained professional in a health-related area and had a central theme to aid elderly in obtaining, evaluating, and using Web-based information. Topics of the webinars were: a) Paths to Quality Health Information; b) How Ageism Creates Barriers to Well-Being; c) Steps to Healthy & Tasty Eating; d) Active Living,; and e) Health and Wealth. Each webinar was archived and is accessible on the HERE website. Senior centers were provided LCD projectors, screens, and speaker phones to be used for these webinars and for other programming.

Results

Total participation in the four interventions is provided in Table 2.

Table 2.
Interventions and Total Participants in Four Rural Communities

Intervention	Description	Participants
My Health Companion©	A simple and effective way for tracking and maintaining health information	68
Powerful Tools for Caregivers	A train-the-trainer workshop focused on appropriate self-care for those involved in informal caregiving	12
Prescription for Success	A 'hands-on' workshop guiding elderly to quality web-based health information	41
Health Information Webinars	A series of five monthly webinars on health-related information for elders	152

MHC© Results

A total of 103 indicated an initial interest in the MHC© portion of the project and were mailed an informed consent, a baseline questionnaire, and the personal health record. A total of 68 returned the baseline questionnaires and had the opportunity to use the personal health record for six months. Participants were sent a follow-up questionnaire to assess their impressions of the MHC© and the changes in their perceptions of their role in health decisions, etc. A total of 54 participants returned the post-evaluation questionnaire. Their mean age was 64 with an average education 13.6 years. Participants primarily lived in small towns (69.1%) with 23.5% on a farm/ranch and 5.9% rural but not on a farm/ranch. They evaluated the usefulness of MHC©, on a scale of 1 "Not at all useful" to 6 "Extremely useful". The mean was 4.17 for how useful it was in tracking personal health and 4.53, when asked if they would recommend MHC© to others. Interestingly, 38.9% of participants indicated that they had not used the MHC©.

PTC Results

At the end of the workshop, the 12 participants completed a standardized evaluation that consisted of 17 scale items. On a scale of 1 "Strongly Disagree" to 4 "Strongly Agree," there was a mean of 3.33 or above for each of the items. These items tapped abilities that are critical for caregivers to possess, and it was rewarding to see the positive response to the workshop. Caregivers need to have the capacity to obtain, process, and understand basic health information and services in order to make well-informed health-related decisions. The intent was that each "trainee" would return to home with the skills, expertise, and materials to conduct the PTC workshop for others in their communities.

Prescription for Success Results

A total of 41 participated in the hands-on workshops, which were evaluated in a three-step process. The first (T1) questionnaire was completed immediately prior to the workshop (N=41), the second (T2) was mailed the week after the workshop (N=41), and the third (T3) was mailed a month after the workshop (N=39). The mean age was 67.2 years, and the mean for education was 14.7 years. Most lived in a small rural town (56.1%); 26.8% lived on a farm or ranch; and 17.1% lived rurally, but not in a town or farm or ranch. There was a significant increase from T1 to T2 and from T2 to T3 for "computer skills" and "confidence in searching for health information." Overall health knowledge increased significantly from T1 to T2. On a scale of 1, "Strongly Agree," to 10, "Strongly Disagree," there was a strong mean score (1.92) for "their willingness to recommend the workshop to others in the community." However, the mean was 5.56 "for the need for follow-up assistance to feel confident enough to search for health information on their own." The added five webinars were to reinforce what was taught in the workshops and to motivate seniors to strengthen their skills in using the Internet to seek health information.

Health Information Webinar Series Results

An evaluation was completed by participants immediately following each session. A total of 128 evaluations were returned. Participants had an average of 13 years of education; 61.5% were retired, 4.6% were disabled, 4.6% considered themselves homemakers, 29.2% were still employed, and most were women (78.5%). There was agreement that they would be able to apply the webinar information to their lives, and 93.8% indicated they would recommend the webinar to others. About half stated that they had Internet available to them at home. They reported using a variety of health information resources, including television, magazines, Internet, senior centers, and health care providers, with their health care provider as the primary source and the Internet their secondary source.

Discussion

Future migration patterns will have far-reaching impacts on the aging of rural America, where a disproportionately high number of older adults already face a wide array of challenges (Cromartie & Nelson, 2009). Gerrior and Crocoll (2008) suggested that Extension is strategically directed and uniquely positioned to improve the health and well-being of older adults through enhanced access to educational resources and support services. Programs such as the HERE Project, designed to improve the health literacy, health outcomes, and well-being of rural elderly by building the health literacy community infrastructure are emerging.

Positive Methods/Observations

The Town Hall meetings to introduce and launch the HERE Project were well attended by a broad spectrum of community members. Initial interest in participating in MHC© was high; however, only 66% actually participated. The hands-on workshops designed to engage elderly in Web-based searching for health information were well attended. Senior center directors and local librarians encouraged seniors to continue using the Internet to search for health information. The PTC training was a welcomed intervention and in one community was the highlight of the HERE Project. Interest in the webinar series varied across the communities. Interestingly, the smallest town had the largest turnout, and the largest town had the smallest turnout. At the end of the HERE Project, the investigators met face-to-face with the local key stakeholders to critique the project and gain their insights into strengths and weaknesses of the project. These meetings provided valuable information for planning future projects.

Limitations

Rural research projects characteristically have a number of shortcomings. Participants are few in number, which requires using multiple rural sites. Researchers are often not on-site. Travel distances for the HERE Project research team to visit the four communities exceeded 1,100 miles for each round trip, which was expensive and time consuming. Thus, we depended on the commitment of the community stakeholders for facilitation, marketing, and sustaining the momentum of the project. Another serious limitation was the fact that the HERE Project was funded for only 1 year, and rural research projects, by nature, require more lead time for community entry, buy in, and marketing in addition to carrying out the project.

Lessons Learned for the Future

The project described here consisted of a newly designed process with a trial run of the various interventions and components that rendered valuable insights that can be taken into consideration in the future. Through the HERE Project interventions, it was clear that there is a critical need to develop, promote, and improve access to electronic health information at the community level for elderly in small rural communities.

Conducting a research project from a remote location requires the recruitment of a strong local facilitator committed to the various aspects of the project. More lead time in developing the project with local stakeholders would have helped in identifying the best central meeting location for seniors in each community, e.g., senior center, library, court house, community center, etc. Also, more frequent contact with local stakeholders would have most likely increased recruitment of participants and facilitation of the HERE Project at the local level. It would be advantageous in future projects to identify a key person in each community with Web-based skills and a passion for facilitating computer and Internet use by the elderly. In summary, key lessons learned for future projects promoting health literacy in rural settings included the following:

- That selecting another community site, other than the senior center (i.e., the public library), for the "hub" of health literacy activities may attract a broader audience of older adults;
- That communities may have two separate subsets of elderly—those who use the computer and Internet, and are interested and motivated to learn more and those who are not computer/Internet savvy and do not appear to be interested in learning;
- That providing ample lead time before the "hands-on" workshops for elderly to become familiar with the mouse, cursor, and monitor by encouraging computer games like solitaire would be very beneficial; and
- That partnering with a local high school where computer savvy students could help teach elderly how to use the computer and search the Internet for health information would enhance and help sustain the program.

Conclusion

In summary, there is a wide range of levels of readiness in engaging rural elderly in various interventions to improve their health literacy. Community-based stakeholders are key to marketing, supporting, and implementing practices and interventions to improve health literacy of rural elderly. Although local senior centers appeared to be a central point of contact for engaging seniors, a more neutral location like a public library might increase participation in health literacy workshops and webinars. Future projects employing interventions to improve health literacy need to be intentional in working closely with the elderly, their caregivers, and community stakeholders. Caregivers may hold the key to helping enhance health literacy skills of elderly, as many are receptive to applying electronic technologies that help them deliver, monitor, and coordinate care for their loved one (National Alliance for Caregiving, 2011).

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