Perspectives and Experiences Related to Physical Activity of Elders in Long-Term-Care Settings

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This qualitative study investigated individual and situational factors influencing physical activity (PA) practices of elders in residential-care/assisted-living (RC/AL) communities. This article describes the results of focus-group interviews involving 47 residents across 6 RC/AL settings. Thematic analysis revealed 6 themes: staying active, past PA experiences, value of PA, barriers to PA, strategies to facilitate PA, and support needs to promote PA. Staying active meant walking indoors and out, attending chair-exercise programs, performing professionally prescribed home exercises, and using available exercise equipment. Past PA experiences shaped current preferences and practices. Participants agreed that exercise helped maintain physical functioning but recounted cognitive and situational barriers to PA. Lack of dedicated exercise space and short corridors hampered efforts to stay active. Participants wished for individualized home exercise programs and supervised exercise sessions. Future research should examine the extent to which the physical environment and PA programming in RC/AL communities affect elders’ PA.

Keywords: exercise, assisted living, built environment

Older adults who participate in regular physical activity (PA) gain significant health benefits including reducing the risk of several chronic diseases and ameliorating age-related declines in physical function (Centers for Disease Control and Prevention, 2011b; Nelson et al., 2007). However, inactivity is common among this group. A 2010 National Health Interview Survey found that 73% of adults age 65–74 and 82% of adults age 75 and over did not meet the level of regular leisure-time PA recommended in Healthy People 2010 (Centers for Disease Control and Prevention, 2011a). Crombie et al.’s (2004) interview survey of 409 older primary-care patients found that over 50% had little or no leisure-time PA, yet 79% believed they engaged in sufficient PA to stay healthy. Factors associated with physical inactivity in community-dwelling seniors include female sex, fewer years of education, racial or ethnic minority status, older age, lower self-efficacy for exercise, poorer physical health, and lower expectations for improved health as an outcome of exercise (Clark, 1999b; Federal Interagency Forum on Aging-Related
Although population-based surveys have provided estimates of PA behavior among community-dwelling elders, we know little about the PA patterns of elders living in long-term-care (LTC) settings such as nursing homes or residential-care/assisted-living (RC/AL) communities. Findings from the few extant studies are difficult to interpret. In addition to using small samples, they did not always clearly delineate their LTC settings. Details regarding LTC settings are important for several reasons: Nursing homes accommodate people who are more impaired and less active than elders in RC/AL communities and who require higher and costlier LTC services, including rehabilitation and/or 24-hr nursing supervision. In contrast, RC/AL communities cater to individuals needing primarily personal-care services (National Center for Assisted Living, 2010). With the population of adults over age 65 projected to be 72 million by 2030, substantial LTC savings could be realized by keeping elders who are in RC/AL communities physically active and functionally capable and, as a result, out of nursing homes (Federal Interagency Forum on Aging-Related Statistics, 2010). The current study was designed to investigate factors influencing PA practices of older adults residing in RC/AL communities.

Physical Activity Practices in LTC Settings

The modest literature on this topic indicates that older adults in LTC settings lead sedentary lives. Factors include insufficient equipment, staffing, and indoor and/or outdoor walking space, which limit the availability of programs that could increase residents’ PA practices (Benjamin, Edwards, & Caswell, 2009; Lu, 2010). Resnick (2000) found that only 20% of LTC residents reported engaging in exercise at least 20 min three times a week. A study of LTC residents that measured PA with an accelerometer found the mean number of activity counts per minute during waking hours was 133 (Chin A Paw, Poppel, & van Mechelen, 2006). Accelerometer activity counts vary with the intensity and speed of the activity; healthy adults have recorded from 2912 activity counts per minute during normal-speed walking to 10,080 activity counts per minute during jogging (Yngve, Nilsson, Sjöström, & Ekelund, 2003). Taken in context, 133 activity counts/minute reflect fairly sedentary behavior.

Most RC/AL communities offer PA programs consisting of basic chair exercises, although these are typically scheduled just once a week and are poorly attended (Lu, 2010; Mihalko & Wickley, 2003; Wasner & Rimmer, 1997). This is particularly unfortunate for RC/AL residents whose inactive lifestyle increases their risk of more rapid functional decline and subsequent relocation to a nursing home (Aud & Rantz, 2005; Zimmerman et al., 2005). This sequence of events could be delayed or avoided in many cases. Good evidence exists that structured PA programs (e.g., strength, flexibility, balance, and mobility training) improve physical function in RC/AL residents (Brill et al., 1998; Jensen, Nyberg, Rosendahl, Gustafson, & Lundin-Olsson, 2004; Lazowski et al., 1999; Sihvonen, Sipilä, & Era, 2004; Tseng, Chen, Wu, & Lin, 2007). Low intensity programs for more frail elders, including seated strength and flexibility exercises, also have had encouraging results (Baum, Jarjoura, Polen, Faur, & Rutecki, 2003; McMurdoo & Rennie, 1993). In addition, a 1-day trial comparing two devices for measuring steps found that AL residents logged a mean of 6,420 steps, the equivalent of 64 min of walking (Bergman et al., 2008;
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Tudor-Locke, Hart, & Washington, 2009). Although subjects in the latter study may have over-performed on the single day of testing, that they were able and willing to reach recommended levels of PA is encouraging. Collectively, PA interventions improve gait speed, ambulation ability, balance, chair-to-stand time, timed up-and-go, grip strength, spinal flexion, and joint range of motion. Improvements in these areas boost RC/AL residents’ functional ability and increase their likelihood of aging-in-place (Giampaoli et al., 1999; Onder et al., 2005).

Because RC/AL communities offer too few PA programs and because service plans in such communities may promote inactivity, it is important to identify factors that motivate these elders to initiate and maintain PA (Mihalko & Wickley, 2003; Resnick, Galik, Gruber-Baldini, & Zimmerman, 2009). Unfortunately, little research about the barriers and facilitators of PA for older adults in RC/AL is available. A survey study of continuing-care retirement communities found that PA level was higher for AL residents in those that had better quality PA facilities and programs and in which management and staff encouraged residents to be active (Harris-Kojetin, Kiefer, Joseph, Arch, & Zimring, 2005). It is also known that seniors living in AL who have better physical function and physical health and higher self-efficacy for exercise have higher levels of PA (Wickley, Mihalko, & Marsh, 2002), but other factors that may influence PA are not well explicated for this population.

Independently living older adults have identified numerous barriers or constraints to PA, including physical problems (e.g., joint or back pain, shortness of breath, fatigue, fear of falling or injury, fear of chest pain, and poor health) and social-cognitive factors (e.g., lack of interest or motivation, lack of companionship, low self-efficacy, self-consciousness, and past sedentary lifestyle; Clark, 1999b; Conn 1998; Dergance et al., 2003; Rasinaho, Hirvensalo, Leinonen, Lintunen, & Rantanen, 2007). Conversely, some older adults exercise to benefit their health and joint mobility (Humphrey, 2006). In qualitative studies exploring facilitators to exercise in older adults, researchers identified important considerations, especially for women, including having exercise companions, enjoyable activities, and a leader with whom they could relate (Clark, 1999a; Cohen-Mansfield, Marx, & Guralnik, 2003). Some seniors like group exercise programs, but others find them inconvenient (Clark, 1999a; Cohen-Mansfield et al., 2003; Damush, Perkins, Mikesky, Roberts, & O’Dea, 2005; Whaley & Ebbeck, 1997). Finally, older adults have identified bad weather, crime, sidewalks in disrepair, and inadequate transportation as environmental deterrents to PA (Clark, 1999b; Conn, 1998; Crombie et al., 2004; Rasinaho et al., 2007). Fortunately, state regulations for physical-plant requirements and provision of services in RC/AL communities serve to minimize some of these types of deterrents.

Health Promotion Model

Creating successful PA interventions for this population requires understanding the factors influencing their PA behavior. For older adults, a useful framework is the health promotion model (HPM; Pender, Murdaugh, & Parsons, 2006). As depicted in Figure 1, this model shows the influence of personal factors such as age and gender (individual characteristics) and earlier PA behavior (experiences) on outcomes (behavioral outcomes). Mediating the effect of individual characteristics and experiences on behavioral outcomes are other factors: activity-related affect,
perceived self-efficacy, perceived barriers, perceived benefits, interpersonal influences, and situational influences. These behavior-specific cognitions and affect are good targets for intervention because they affect health-promoting behavior directly or (indirectly) by affecting commitment to a plan of action. Factors subsumed under behavior-specific cognitions and affect, such as the availability of suitable programs, peer exercise companions, and administrative or staff support, exert unique influence in the RC/AL milieu.
Purpose

The primary aim of this qualitative study of older adults in RC/AL communities was to identify three HPM constructs: individual characteristics and experiences, behavior-specific cognitions and affect (including the types and frequency of PA programs offered in the participating communities), and behavioral outcomes related to PA behavior. A secondary aim was to identify older adults’ preferences for types of PA. Identifying factors related to PA behavior in RC/AL residents may help inform PA interventions to maximize maintenance of PA behavior and to address environmental issues that affect opportunities for PA.

Method

We conducted a qualitative study using focus groups to better understand RC/AL residents’ views and experiences regarding PA and characteristics of their setting that may influence their PA behavior. A focus group is a small-group interview conducted in a nonthreatening environment with participants from similar backgrounds. We chose to use focus groups rather than one-on-one interviews because group interviews are an efficient method to generate large amounts of data and obtain multiple perspectives in a defined area of interest (Krueger & Casey, 2009). Rabiee (2004) explained that the main aim of a focus group is “to understand and explain the meanings, beliefs, and cultures that influence the feelings, attitudes, and behaviors of individuals” (p. 655). Focus-group interviews encourage participants to engage in the research and facilitate a convergence of ideas among group members (Nies, Vollman, & Cook, 1998; Rabiee, 2004). Thus, the synergistic interaction among group participants may yield data that are deeper and richer than can be obtained from one-on-one interviews (Rabiee, 2004).

Demographic data were collected on focus-group participants and their respective communities. In addition, RC/AL administrators were asked how often each week their community had the following exercise programs: chair exercise, structured walking, strength training, stretching (e.g., yoga), balance (e.g., tai chi), dance (e.g., social, aerobic), and water exercise.

Sample

Krueger and Casey’s (2009) recommendation to conduct three or four focus groups with each category of interest (i.e., RC and AL communities) guided our recruitment efforts. From the population of 41 RC and 18 AL facilities licensed by the Missouri Department of Health and Human Services in nine specific counties in central Missouri, sequential random selection resulted in the total recruitment of 8 AL and 17RC communities. Of those 25 communities, four AL and three RC communities agreed to participate. A focus group at one of the three participating RC communities had just two residents, both of whom had cognitive impairments that threatened the accuracy of their responses. Therefore, that transcript was not analyzed, and the final sample included six focus groups with a total of 47 participants. Of the 18 recruited communities that did not participate, eight were excluded because they served only those with severe mental illness, four refused outright, four had low census or an inadequate number of interested residents, and two were in the process of closing.
Inclusion criteria specified that focus-group members be English-speaking adults age 60 and over with minimal or no cognitive impairment. They could not reside on a locked unit. A letter of invitation addressed to facility administrators explained that we hoped to recruit five to eight residents meeting these criteria for each focus group.

**Procedure**

After the university institutional review board approved the study, recruitment letters were sent to administrators of randomly selected RC/AL communities, followed up 1 week later with a telephone call from the principal investigator. After explaining the study, the principal investigator scheduled a resident-recruitment session and focus-group meeting for willing communities. Recruitment efforts ceased with communities serving primarily those with severe mental illness or dementia. Posters announcing the date and time of the recruitment session and the focus-group study were mailed to communities in advance of recruitment sessions. During the sessions, residents learned about the study. The principal investigator reviewed the consent form verbally with all interested residents; printed copies of the form were distributed at recruitment sessions and focus groups. Since the study met criteria for minimal risk, a waiver of documentation of consent was obtained from the institutional review board. As a gesture of inclusivity, the invitation to participate in the study was extended to all residents of willing communities.

The focus groups were held at each recruited RC/AL community in a space its administrator deemed most suitable. The moderator (first author) and assistant moderator (second author) welcomed participants at the beginning of each focus group. Participants received nametags displaying their first name. Snacks and beverages were provided because mingling over food and drink before focus groups can enhance communication and interaction during the meeting (Krueger & Casey, 2009). Before each focus-group session, the moderator reviewed the consent document; explained the topic, procedures, and ground rules; and advised participants that the discussion would be tape-recorded and that notes would be taken. Both moderators were nurse researchers with expertise in gerontology; the assistant moderator had also had extensive experience conducting focus groups. Although both researchers work from a postpositivist perspective and generally use quantitative methods, we agreed that group interviews in multiple RC/AL communities would pose the least amount of burden to frail elders and yield the quality and quantity of data needed to answer our research questions.

**Focus-Group Process**

Krueger and Casey (2009) write that a focused interview in a group setting should include about a dozen questions and that the most useful information develops as questions evoke natural conversation among participants. Following this advice, we developed a 10-question formal interview guide reflecting the constructs of the HPM:

1. The first topic I’d like to discuss is what physical activity or exercise means to you. So could you tell me what you think about physical activity?
2. What physical activity programs do you participate in now? What types of exercise did you do when you were younger?
3. When you are physically active, how do you feel?
4. What strategies do you use to stay physically active?
5. What physical activity programs are of interest to you or do you want to learn more about? (Examples to offer if needed: group programs like tai chi or water aerobics, exercises you can do alone such as lifting weights)
6. Are there exercises or programs that do not interest you?
7. Tell me what benefits or value exercise has for you.
8. Tell me what interferes with or stops you from exercising or being physically active.
9. What kind of support might help you keep up with regular physical activity? (Examples to offer if needed: friends who exercise with you, staff who offer you encouragement, doctor who recommends a type of physical activity, individualized instruction)
10. Our goal in having this focus-group discussion is to understand what helps and limits your physical activity level. Is there anything that we should have talked about but didn’t?

The moderator opened the discussion by asking a “grand tour” question focused on participants’ views about physical activity or exercise. Subsequent questions were asked to fit the flow of conversation but not necessarily in the order presented. We frequently relied on unstructured interviewing to capture information that was relevant but that diverged from the formal questions. Questions were phrased in everyday language to enhance understanding and probes—for example, “Tell us more about that”—were used when further exploration was needed.

The moderator directed the discussion and kept the conversation flowing and on the topic of PA. The assistant moderator took notes, handled environmental conditions and logistics (e.g., refreshments, seating), and responded to unexpected interruptions. Each member of the group was encouraged to respond to each question. Discussions were captured on two digital recorders and transcribed verbatim. Each session continued until interest in the discussion faded, which usually occurred at about 1 hr.

A brief demographic form was completed on each participant either immediately before or after the focus group. Administrators completed forms on facility demographics and available PA programs. Participants were compensated for their time and effort by being offered their choice of a high-quality personal-care product from a basket of items (similar to a door prize) at the conclusion of the meeting. Immediately after each focus group, the moderator and assistant moderator discussed group interaction/dynamics, unexpected findings or concerns, and recommendations for future groups.

Data Analysis
A professional transcriptionist transcribed focus-group recordings into a Microsoft Word document, and the first author cleaned the data by listening to tapes and reviewing transcripts to ensure accuracy. Data were imported into QSR NVivo 9 software for data management and analysis. Following Krueger’s systematic analysis process, both authors separately analyzed the text of each question for emerging
themes (Krueger, n.d.). The interview questions represented unique constructs of the HPM; thus, it indirectly served as a guiding framework for coding and analyzing the interview text. Themes were defined and written in the memo field for easy retrieval. Quotes representing each theme were identified. After independent coding, the researchers met to discuss interpretations and reach consensus on final themes.

Trustworthiness of the research findings is supported by attention to credibility, dependability, and transferability. We ensured credibility, the extent to which data and data analysis reflect the intended focus, by obtaining validation of experts regarding the study design, sampling method, and topic questions and by establishing coresearcher agreement of data coding, sorting decisions, and subsequent interpretation (Graneheim & Lundman, 2004). Our uniform approach to every focus group helps ensure the dependability of the data. Finally, the comprehensive description provided in this report permits transfer of the findings to similar RC/AL communities.

Results

Most of the focus-group participants were female (89%), White (100%), and widowed (81%). The mean age of the sample was 85.4 years ($SD = 7.2$), with 12.3 years ($SD = 3.4$) of education. On average, participants had lived in RC or AL communities for 29 months ($SD = 38.6$).

Chair-exercise programs were offered in all six RC/AL communities and ranged in frequency from twice weekly to twice daily. Most communities believed that their chair-exercise program included elements of strength, balance, and flexibility training and did not offer distinct programs of these latter types. Two communities reported having a structured walking program that occurred two or three times a week, and two other communities mentioned plans to add new group exercise programs. RC/AL buildings were 9–33 years old and ranged in capacity from 30 to 87 occupants ($M = 51$, $SD = 25.7$). Five of the six communities were for-profit entities. Most communities were affiliated with a chain; one for-profit community was not part of a chain.

Six themes emerged from our analysis of participants’ responses to the interview questions. The themes, described next, represent our consensus on coding decisions for manifest—that is, obvious—content (Graneheim & Lundman, 2004). The current analysis stayed close to the data and did not attempt to interpret underlying meanings of the text.

Staying Active

The first theme identified from the transcripts, staying active, emerged from the discussion about current exercise or PA practices. Staying active meant walking indoors and out, attending chair-exercise programs, performing professionally prescribed home exercises, and occasionally using available exercise equipment such as a stationary bicycle. Walking was the most commonly reported PA in all groups. One woman from Focus Group 5 explained that walking was the best exercise for her because “It’s easy to pick it up and you never need other equipment or anything like that, so that helps, and that’s about all I think about.” Comments like “Well, I
walk the hall several times a day” and “I like to exercise, I love to walk” surfaced frequently across groups. Walking also accommodated the use of walkers, which was a consideration of many participants in the study. A woman from Focus Group 2 mentioned, “I like to walk outside too. I can walk fairly well, although I have a balance problem and that requires me to take my walker.” Although some participants bemoaned their need for a walker, a lady from Focus Group 3 acknowledged that walking with a walker helped her stay active.

**Past PA Experiences**

Reports of current PA were often intertwined with reminiscent statements about past PA experiences. Past PA fell into four categories: a means of transportation, a component of labor, a form of recreation, and a prescribed treatment. Several participants recalled that they walked to work in their younger years. One spry lady in her late 90s from Focus Group 5 reported, “We walked to school. We walked everywhere. We didn’t have a car.” Many participants described performing laborious duties on the family farm (e.g., slopping hogs, picking and canning fruits, feeding cattle, and hauling manure), as well as holding physically active jobs (e.g., hospital cook, grocery-store cashier, postmaster, hairdresser, and police officer). There was little mention of childhood recreational PA, although a few participants mentioned that they had engaged in recreational activities like golf, swimming, and dancing as adults. Some of the seniors in our sample mentioned past experiences with physical therapy or cardiac rehabilitation, although some saw this type of exercise as episodic and time-limited: “I’ve been through [name of cardiac rehabilitation facility], as [name of another resident] says, because I had a heart attack, and then I had two congestive heart failures and I had to take exercise again.” Another woman, however, frightened from a near-death experience, continued the exercise program she had been previously prescribed: “Well, I got these exercises that I take that the physical therapist gave me to take when I was so sick and I came back to my apartment.”

**Value of PA**

The participants made frequent references to the value of exercise and PA for maximizing physical function and overall well-being. On more than one occasion, participants expressed the idea that staying active was self-perpetuating. In the succinct words of one woman, “It helps me be able to do it again.” Most, though not all, reported feeling better when they were physically active. Participants spoke with pride about being self-sufficient, as evidenced by the following remarks: “I take care of myself and do stuff for my own self and I don’t have to depend on somebody else.” “I sit on my bed and raise my feet up. I think that’s good because you need to be able to raise your feet to get into your slacks.”

Others attributed improved muscle tone, balance, and strength to regular PA. The word *limber* was used repeatedly in reference to the benefits of PA. One woman stated, “But it has kept me healthier in that when I’ve broken both hips and so forth and I recovered well, and I feel it’s because I’ve exercised and kept my body limber and in shape.” Another woman (age 96) who had been recently hospitalized, but had already returned to the in-house exercise class, stated,
I had three things. I had congestive heart failure, pneumonia, and the stomach flu all hit me New Year’s Eve. Oh, man, I was sick and then I went into hospital that week and I was in the hospital a week, and I haven’t really recovered from that real good yet. But at my age, it’s a miracle I lived. And I lay it to being active and exercising and the Lord’s touch on my body.

Some participants believed that the value of PA extended beyond the physical domain. In the words of the chair-exercise leader in one community (a resident in her mid-80s who organized the daily in-house video program),

Well, I think maybe some of our people may not be aware of it, but the fact that they have to concentrate and listen to the tapes is a mental exercise. I’ve read articles which encourage exercise programs, particularly those either with a leader or with tapes, because it forces the person to concentrate and we, many of us have problems with memory loss and this can help overcome some of those problems by the concentration and the listening that is done.

Benefits to sleep, mood, and energy were also mentioned. Finally, organized exercise programs offered the opportunity to socialize with others, as represented by this woman’s comment, “But I really enjoy the exercise. I would miss it so much if we didn’t come in here every morning and we spend about 40 minutes or so, and it’s a good way to start the day.” For those desiring companionship and support, group exercise programs conferred a positive situational influence.

**Barriers to PA**

Despite an awareness of the value of exercise, numerous barriers to PA were identified. When asked what gets in the way of exercise, participants listed factors in two broad categories—individual and situational. Individual factors included laziness, boredom, impaired sight and hearing, pain, musculoskeletal problems such as arthritis or joint replacement, chronic neurological conditions like Parkinson’s disease or stroke, poor balance, history of falling and subsequent fear of falling, and acute illness. Health problems prevented people from using available equipment or safely walking alone. Owning her lack of motivation, one woman stated,

I think television gets in my way at times. You know, when you sit and watch television and you think about that old thing, body at rest tends to remain at rest, and body in motion, you know, tends to remain in motion. Well, I can sit and turn television on and just sit there, you know, for hours and watch it.

Other competing demands included family visits and in-house recreational activities. Negative situational influences specific to LTC settings emerged, as well. Some communities had no space dedicated for exercise and placed existing equipment in communal living space. Others had dedicated physical space for exercise but also had policies that may have deterred interest, such as requiring physician permission and staff supervision to use the equipment. In addition, extremes in weather interfered with outdoor walking, a limitation that some overcame in larger communities having extended indoor corridors: “If you start at my door and walk all the way around it’s equivalent to one block.”
Occasionally, personal and situational factors converged to sabotage individual efforts. One woman remarked, “I can’t adjust it [recumbent bicycle] because I’m blind and so I haven’t used it for that reason because it’s designed, you know, my legs fold up even just putting them on the pedals, so I don’t use it.” A woman in Focus Group 2 explained that the timing of the chair-exercise program did not suit her schedule: “They exercise here at 9:30 a.m., and I’m not up and about at that hour. If it came later, you know, when I was up and dressed I would come out and take part.”

**Strategies to Facilitate PA**

Among the few participants that identified a specific strategy they used to stay active, most mentioned the importance of planning exercise into one’s daily routine. Some participants depended on reminders or assistance from staff to take a walk, a strategy that reflects the pervasive loss of independence for those living in LTC. One community with twice-daily chair-exercise sessions posted the exercise schedule on a centrally located bulletin board, which participants thought was an effective reminder. One particularly active lady used the stairs instead of the elevator to add exercise to her daily activities. Another woman remarked that feeling sleepy prompted her to “get up and move around.” Although a portion of the data supporting this theme may also fit in the next theme, supports needed to promote PA, we agreed that participants’ descriptions of the ways they incorporated PA into their daily lives merited recognition with a distinct theme.

**Supports Needed to Promote PA**

Participants identified their preferences for types of exercise programs, as well as supports they needed to be more physically active. Many voiced the desire for an individualized home exercise program, particularly when another member of the group described his or her individual program, which in most cases was associated with prior rehabilitation services. Participants in several groups thought that supervised exercise sessions with a motivated leader would facilitate more PA, as the following statements illustrate:

An actual person talking to you and looking you in the face, saying, now they use, I can’t say that’s the only thing they use but I been a few times where we set, a few of us, in front of the tube and somebody wiggled a little [inaudible]. I mean, I’m lost there. I, that just doesn’t do anything for me at all. Doesn’t motivate me. I think you have to have a person to motivate you, have to have a leader.

Somebody to motivate you to get up and get out and, you know, take part in an exercise group.

I’m curious about tai chi. I know it’s for balance, but since we just do chair exercises I didn’t know if we would be able to do anything like that.

I tell you what I like, that swimming pool down there. It really needs to be used, and someone needs to direct people on how to exercise in it.
Finally, a woman from one of the newer but smaller communities was interested in locating a place “where you could walk all year rather than just walking outside while it’s nice weather.” Another woman from a larger community with indoor space for walking validated this sentiment, “If it’s nice weather, I walk outside, walk around the building. Otherwise I walk inside. I feel good about that. I think it’s really good.”

Discussion

The older adults participating in this focus-group study identified several factors that influenced their level of PA, as well as potential solutions to increase their overall PA. The themes identified in our analysis of the transcribed text are congruent with the constructs of the HPM. We found in this sample of RC/AL residents that past PA experiences (HPM prior related behavior), barriers to PA (HPM perceived barriers to action), value of PA (HPM perceived benefits of action), and strategies to facilitate PA (HPM commitment to a plan of action) influenced staying active (HPM health-promoting behavior; Pender et al., 2006). Although our findings support the HPM construct of situational influences, we interpreted situational influences as positive or negative in the context of value of PA or barriers to PA, respectively. Finally, participants offered supports needed to promote PA for themselves and other residents of their specific communities, which was a potential antecedent to PA behavior not explained by the HPM. Supports needed to promote PA addressed the availability and adequacy of environmental resources that participants believed would influence their behavior, such as staff assistance with walking, facility programs, and exercise equipment. Thus, in circumstances where individuals rely heavily on environmental resources to support healthy behaviors (e.g., LTC settings) socioecological models may be better suited than the HPM to guide PA research (Harris-Kojetin et al., 2005).

As with community-dwelling adults, walking was the most preferred type of PA for participants in our study (Clark, 1999a; Crombie et al., 2004; Lim & Taylor, 2005). Walking for many of the participants represented a lifetime of habit; whether performed for the purpose of transportation or recreation, being able to walk was nearly synonymous with staying active. Chair-exercise programs were also popular, perhaps because these programs were more readily available than other types of exercise and provided an opportunity for those with severe mobility limitations to participate (Rasinaho et al., 2007). In addition, group exercise programs may enhance self-efficacy by virtue of mutual social support and encouragement between group members (McAuley & Blissmer, 2000). Seated exercise programs in RC/AL settings, when designed to elicit gains in strength and flexibility, have resulted in improved physical function, balance, activities of daily living, and grip strength (Baum et al., 2003; McMurdo & Rennie, 1993). Taken together, the interests and efforts of older adults to age in place may be better served by increasing both the frequency and the intensity of structured walking and chair-exercise programs in RC/AL communities.

Situational influences affected both reported barriers to PA and the perceived value of PA. On a positive note, participants in the current study identified the opportunity for companionship during group exercise programs as a value of PA, a value that promoted and sustained participation. This finding is consistent with
prior research in community-dwelling adults that identified lack of company as a barrier to PA (Clark, 1999a; Dergance et al., 2003; Rasinaho et al., 2007). Many participants also realized that some form of exercise was necessary to maintain or improve their current level of functioning. As with older community-dwelling adults, perceived health benefits were a key motivator for PA (Cohen-Mansfield et al., 2003; Humphrey, 2006; Rasinaho et al., 2007). Residents who had had recent hospital or nursing-home stays recognized how important therapeutic exercise was to their functional recovery and successful return to their respective RC/AL communities. Regular PA may help older adults avoid placement in nursing homes, which is a desirable outcome for them, as well as the RC/AL industry.

Unfortunately situational influences presented many barriers to PA for RC/AL residents. Several of the environmental barriers to PA identified by the participants in the current study were similar to those reported by older adults living in the community (e.g., poor weather, lack of exercise equipment, inaccessible exercise facilities), but others were unique to RC/AL settings. For example, residents in one focus group reported that they were required to obtain the permission of their physician before using community exercise equipment. Most communities that participated in the current study provided their residents with few opportunities for PA, although some had intentions to expand their repertoire of PA programs. The inadequacy of physical space, limited availability of staff, and lack of a specialized room for exercise classes and equipment were barriers identified by focus-group participants and observed by both authors. These findings, also consistent with prior literature, illustrate the slow progress since 1997 in implementing evidence-based PA programs (Benjamin et al., 2009; Mihalko & Wickley, 2003; Wasner & Rimmer, 1997).

The residents frequently discussed concerns about their ability to maintain balance during performance of activities of daily living and exercise. McAuley and colleagues have consistently found a significant relationship between self-efficacy for balance and PA level in older adults across a variety of residential settings (Hall & McAuley, 2011; McAuley et al., 2006). As both a determinant and an outcome of PA participation, self-efficacy is an important aspect of PA behavior (McAuley & Blissmer, 2000). Age-related decline in muscle strength, estimated at 3% per year after age 70 in sedentary persons, also contributes to balance problems and significantly increases the risk of falls in older adults (Moreland, Richardson, Goldsmith, & Clase, 2004; Spirduso, Francis, & MacRae, 2005). The results of meta-analytic research suggest, however, that exercise can reduce the rate of falling in older adults by 17% (Sherrington et al., 2008). Based on the extant evidence and the reciprocal relationship between PA participation and balance self-efficacy, strength and balance training should be basic components of PA programming in RC/AL communities.

Research on the physical-environment characteristics of AL communities suggests the importance of design elements (e.g., outdoor sidewalks, indoor looping corridors), safety (e.g., handrails, seating along walking paths), and land-use patterns (e.g., residential, retail, office) in residents’ walking behavior (Lu, 2010). However, larger buildings that can support these features are costlier to operate than smaller models, a consideration that may explain the trend toward smaller buildings in the AL industry over the past 2 decades (Manard & Cameron, 1997). In the current study, the older buildings were also those with the longest hallways
and most extensive indoor walking space, a feature that may not have mimicked the home-like qualities promoted by the culture-change movement but did maximize opportunities for protected walking.

As suggested by Lu (2010), the preferences of aging baby boomers may soon dictate the design and planning of AL communities. Administrators in Lu’s study recognized that amenities such as walkable environments may be a criterion applied by future customers when choosing senior housing. Lu also contends that organized walking programs should be a mainstay of health-promotion efforts in AL communities. Our findings, too, suggest that elders in RC/AL communities frequently lack the opportunity for sustained and supervised walking.

The current study has several limitations that deserve mentioning. First, although consistent with mid-Missouri population demographics, the participants in our study lacked racial and ethnic diversity. Second, the RC/AL communities in this study were located in central Missouri, an area composed of rural communities and small cities or towns. Access to and availability of resources that support physical activity, such as fitness facilities, parks, walking paths, and sidewalks, may be more favorable in larger metropolitan areas. Third, very few men participated in the focus groups. Finally, the topic of physical activity was of interest to the participants, many of whom already maintained a physically active lifestyle. Thus, our findings may not apply to seniors of varying racial or ethnic backgrounds, those located in urban areas, men, or physically inactive seniors.

In summary, we suggest that RC/AL communities offer daily PA programs, maximize use of available staff and resources, and expand their repertoire of program offerings. Daily programs that are offered on a variable schedule will give residents choice in the time of day they choose to exercise. Communities equipped with walkable space, outdoor or indoor, could promote greater PA by organizing staff-supervised walking groups. Because seated range-of-motion programs do not improve lower extremity strength or balance, administrators should endorse evidence-based exercise interventions designed for frail elders, such as Functional Fitness for Older Adults (Brill, 2004) and Functional Fitness for Long-Term Care (Lazowski et al., 1999). Other PA programs that have yielded significant functional benefits for community-dwelling elders, such as Fit and Strong (Hughes et al., 2004) and the Lifestyle Interventions and Independence for Elders Study (Pahor et al., 2006), may be appropriate for RC/AL residents with minimal mobility disability. Finally, a Web site of the National Institute on Aging (2010) provides extensive instructions for seniors interested in exercise.

Future research should examine how and to what extent the RC/AL physical environment and PA programming in these environments influence the actual PA behaviors of older adults living there. Features of the environment, such as sidewalk conditions; availability of seating; presence of handrails; adequacy of lighting, as well as protection from excessive sun exposure; and facility location, need to be systematically measured and evaluated. Comprehensive appraisals of this sort require the expertise and vision of multiple disciplines including, but not limited to, nursing, physical therapy, exercise physiology, architecture, and business. Outcomes of such work should not only inform the design of future structures but also provide existing RC/AL communities with tenable recommendations for the promotion of PA.
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References


