Food Science and Human Nutrition Publications   Food Science and Human Nutrition

8-2016

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Keywords

physical activity, older adults, programming, exergaming, intergenerational

Disciplines

Exercise Science | Family, Life Course, and Society | Food Science | Human and Clinical Nutrition

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Introduction

Rural-residing older adults (RROA) comprise approximately 20% of the U.S. older adult population (National Rural Health Association [NRHA], 2011). Rurality presents many challenges to older adults, including limits on health care access, transportation, socialization opportunities and physical activity (PA) opportunities (Baernholdt, Yan, Hinton, Rose, & Mattos, 2012; NRHA, 2011). The incidence of chronic health conditions and health-related lower quality of life is higher in RROA (Baernholdt et al., 2012). Although older adults benefit from attending PA programs, most are not physically active (Stewart et al., 2007), and RROA are the least active of all (Shores, West, Theriault, & Davison, 2009). Increasing PA among RROA is critical for reducing the social and financial costs of aging.

Extension is ideally positioned to reach RROA and provide them with low-cost, effective PA programs. One approach is group-based exergaming (activity that combines video-gaming with PA), which is well received by older adults (Chao, Scherer, Lucke, & Montgomery, 2013; Maillot & Perrot, 2012; Strand, Francis, Margrett, Franke, & Peterson, 2014). Besides offering an opportunity for PA, the group-based approach provides an

environment for socialization (Belza et al., 2004).

The Living (well through) Intergenerational Fitness and Exercise (LIFE) program is a group-based exergaming program for older adults (60+ years) who are beginner exercisers (Francis et al., 2014; Strand et al., 2014). The program consists of 8 weeks of onsite sessions led by older teens and young adults (trainers), followed by a 16-week newsletter intervention (Francis et al., 2014; Strand et al., 2014). A participant from the preceding onsite phase is trained to lead the activities and continues the onsite sessions during the newsletter intervention. The program goals are (a) to connect the generations, (b) to improve perceptions younger adults have about aging, and (c) to promote PA and socialization among community-residing older adults. Table 1 provides additional details about the program.

Table 1.

LIFE Program Components: Overviews and Activities

Program component	Overview	Activities
Training	• Program managers (managers) completed a 6- to 8-hr workshop. • Trainers completed five online modules at home and attended a 4-hr workshop.	Managers • Reviewed program implementation (e.g., host site requirements, recruitment strategies, research protocol) • Participated in Kinect practicum Trainers • Reviewed program implementation (e.g. safety issues with older adults) • Participated in Kinect practicum
Onsite program (8 weeks)	• Managers identified program location and recruited trainers and participants. • Participants engaged in 30–60 min of PA[a] twice weekly using Xbox Kinect Sports. • Trainers—high school- and college-aged students (16–26 years)—led sessions, providing intergenerational component.	Weeks 1–2 • 30-min exergaming activity twice weekly • 30 min of interactive games (e.g., crossword, storytelling) twice weekly • Difficulty level: beginner Weeks 3–4 • 30-min exergaming activity twice weekly • Start of onsite leader recruitment and training[b] • Difficulty level: intermediate

Weeks 5–8

- 30-min exergaming activity twice weekly

- Difficulty level: advanced

Newsletter phase (16 weeks)	• Participants received bimonthly newsletters (8 total).	Nutrition and fitness (4 newsletters)
	• Trained participants from onsite phase led continuation of onsite program.	• Included exercise tips and healthful recipes
		Emotional and intellectual wellness (4 newsletters)
		• Included mental and emotional wellness tips

aActivities included volleyball, bowling, soccer, table tennis, track and field, and boxing. bOnsite leaders were recruited from current older adult participants to continue leading the program after the completion of the onsite component.

The LIFE Program significantly improved PA participation (Strand et al., 2014). Early results were encouraging; however, development and testing were accomplished by a transdisciplinary research team, not Extension. Thus, it was unclear whether the program was feasible as an Extension program. The study described here examined the effectiveness and ease of delivery of the program through county-based Extension personnel.

Methods

For the study, Extension staff in 31 rural counties were invited to participate in the LIFE 2 research project; 13 volunteered. These Extension personnel (managers) were trained in LIFE program delivery and were responsible for its implementation. All provided informed consent. To protect human subjects, the study protocol was fully reviewed and approved by the university institutional review board.

Evaluation

The suitability of the LIFE program as an Extension-delivered program was evaluated through the use of manager feedback collected via either a 2-hr focus group session (n = 5 managers) or an online questionnaire composed of the open-ended focus group questions (n = 7 managers), depending on manager availability. One manager did not participate in the study, resulting in a total sample size of 12. Questions centered on the managers' views of the efficacy of the program as an Extension-delivered program and prompted suggestions for program modifications. A trained graduate student not directly involved with the LIFE program led the focus group session. Focus group responses were audio-recorded and transcribed. Participants who responded to the online questionnaire answered the same questions as the focus group members. All completed a general demographic questionnaire regarding Extension experience, using a 5-point Likert scale (ranging from 1 = *very unlikely* to 5 = *very likely*).

Data Analysis

Both the transcripts and open-ended survey responses were assessed for themes (Krueger & Casey, 2009). Sociodemographic and Extension experience data were analyzed for frequencies and general descriptive data.

Results

The managers were primarily full-time Extension personnel with less than 10 years of Extension work experience. Nearly all (91.7%) were satisfied with the program, and most were "very likely" to recommend it to a colleague (75%) or older adults (83.3%) and "somewhat likely" to recommend it to younger adults (75%). Most (83.3%) reported being "somewhat comfortable" with new technology—a key program component. Table 2 summarizes the data.

Table 2.

Characteristics of LIFE 2 Managers (*n* = 12)

Characteristic	Number	Percentage (%)
Extension programming area		
Family life, nutrition or wellness	7	58.3
Other (e.g., county-based Extension educators)	5	41.7
Years worked in Extension		
<10 years	8	66.7
>20 years	4	33.3
Weekly hours worked for Extension		
10–20 hr	2	16.7
31–40 hr	3	25.0
>40 hr	7	58.3
Overall satisfaction with the LIFE program		
Very satisfied	6	50.0
Somewhat satisfied	5	41.7
Neither satisfied nor dissatisfied	1	8.3
Likelihood of recommending LIFE program to . . .		
Colleague		
Very likely	9	75.0

Somewhat likely	3	25.0
Younger adults		
Very likely	3	25.0
Somewhat likely	9	75.0
Older adults		
Very likely	10	83.3
Somewhat likely	2	16.7
Comfort level with technology		
Very comfortable	2	16.7
Somewhat comfortable	10	83.3

Reasons for Volunteering

Managers emphasized that they became involved with the program to bring programming to RROA, as evidenced by this comment: "Our county has a high population of aging residents. . . . We are trying to do more outreach to underserved audiences, and the older youth (non-4H) and [older adults] both fit into that category." It was frequently stated that without the LIFE program, RROA may not have other resources for PA.

Best Liked Program Delivery Features and Attributes

The best liked program features were

- the ready-to-go-curriculum that included (a) start-up materials and (b) implementation manuals,

- the training workshop, and

- the monthly conference calls that provided an opportunity for the managers to obtain input from peers about programming issues.

The best liked program attributes included the intergenerational aspect of program delivery and the rural focus. Managers enjoyed bringing together two very different age groups that typically do not interact and may have false impressions about one another, as conveyed by one manager who stated, ". . . I think the value of having the [younger] people involved . . . [was that] some of them didn't have much contact with older people. I think all of my trainers benefited."

Bringing programming options to rural communities was also a motivating factor for managers. Many found it beneficial to incorporate this program into rural communities having fewer resources. This perspective is captured by the following remark: "I think for me it was the value of bringing this program to rural counties. I have really rural, real poor counties that don't have [many resources]. So it was something . . . that Extension is doing for the older [adults] in most of my counties; it turned out really well."

Program Implementation Support

Support, whether from the county Extension office, local high school, or general community, was identified as essential for successful Extension delivery of the LIFE program and was often helpful in identifying younger adults, site locations, and potential participants. One manager explained, ". . . I had good [support] from the county Extension offices for identifying the . . . trainers. . . .People from the office started [to attend], and of course it snowballs." Participant support was also critical, as indicated by the following comment: "If you have a champion who is really behind it . . . to convince others that this is a great thing, that is always helpful."

Program Implementation Challenges

Program implementation challenges related to recruiting participants and finding suitable host sites. Recruitment barriers are discussed below and then summarized in Table 3.

Program Recruitment

A common implementation challenge was recruitment. Commenting on this issue, one manager said, "Finding locations, explaining to host sites, students, residents . . . is a long-term commitment for people to make and fit into their schedule[s], but it needs to be [completed] in order for them to try it and make a change." Another challenge was scheduling, particularly trying to align the participants' and trainers' schedules.

Identification and Recruitment of Host Sites

An additional perceived barrier was finding a location for the exergaming sessions. Sites that were more likely to hold successful implementations of the LIFE program were those that were easily accessible for RROA and had a room that was separated from other areas of the building. Privacy was an issue for participants who did not want people not involved in the program watching them. Other positive location characteristics included an easy-to-see screen or big TV, open space, easy set-up space (i.e., a space without chairs or tables that had to be moved), and site support for the program.

Preferred locations were senior apartment complexes or communities, churches, assisted living facilities, Extension offices, physical therapy offices, and community centers. Senior apartment complexes and assisted living facilities were ideal due to high accessibility and the ease for participants, who could walk down the hall to attend. One manager commented, "We were very lucky and supported with our program at a senior housing apartments. [The] staff [were] very helpful in recruiting, reminding, adding [the LIFE program to the] schedule [in] their newsletter, moving furniture, and setting up equipment for each session."

Table 3.

Recruitment Barriers Identified by Life 2 Managers

Group	Barriers
Participants	• Reluctance to take part in the research component of the project, including completing questionnaires three times
	• Ability to get to site location

Trainers	• Allowing trainers to miss school (i.e., high school or college)
	• Aligning trainers' schedules with participants' schedules
	• Working with schools to allow for service learning credit opportunities
Host sites	• Accessibility for older adults
	• Privacy
	• Space availability

Preferred Marketing Strategies

Marketing strategies (i.e., flyers, commercials, radio public service announcements) followed university research protocol. Midway through the study, recruitment materials were revised to include testimonials (Figures 1 and 2). Managers wanted to see more "commercial" marketing tools better tailored to the program and more visually appealing flyers.

Figure 1.
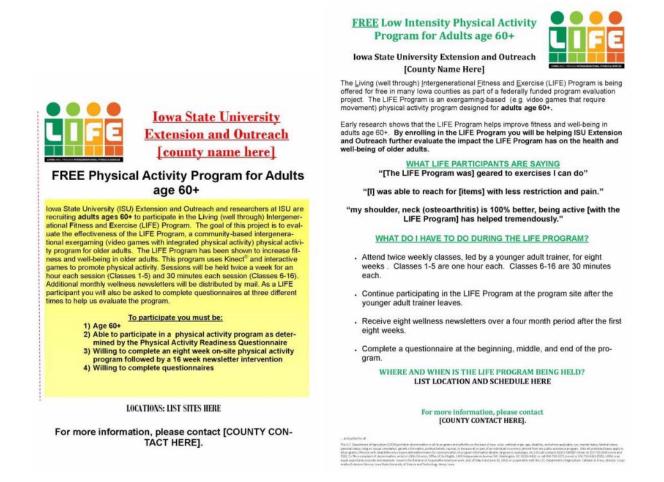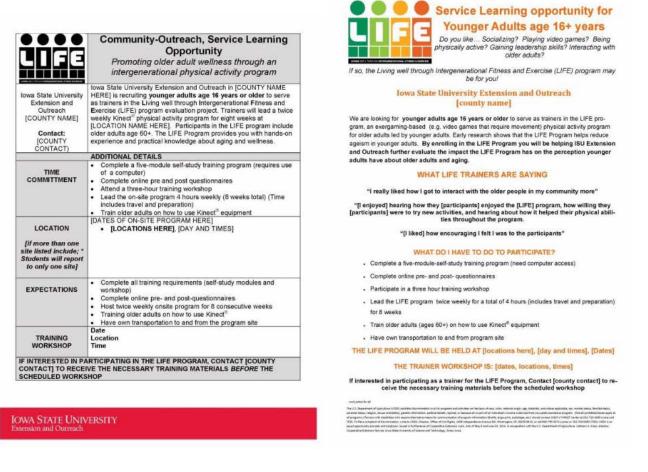Original Versus Revised Older Adult Recruitment Flyer

Figure 2.

Original Versus Revised Trainer Recruitment Flyer

Suggested LIFE Program Modifications

Suggestions for enhancing the Extension delivery of the program included

- increasing the flexibility of the delivery (i.e., allowing the onsite program to meet three times weekly, providing more interactive games) and

- lowering the trainer age requirement.

Managers reported that participants wanted the program to be expanded to three times per week to enhance programming flexibility. Another suggested modification involved making the interactive games optional as some groups did not want to continue with them. Also, managers suggested that the trainer minimum age be reduced to 14 or 15 to increase recruitment options.

Discussion

Extension delivery of PA programs for RROA could have a substantial impact on the number of older adults participating in regular PA. Sequential PA programs for RROA are effective in increasing PA participation (Seguin, Eldridge, Lynch, & Paul, 2013; Strand et al., 2014) and satisfaction with and enjoyment of PA (Seguin et al., 2013).

Program design greatly influences the delivery of an Extension program. The LIFE program provided a ready-to-go curriculum, training workshops, and monthly manager conference calls that allowed for support when programming challenges arose by maintaining lines of communication between managers and the research team

for assistance in finding solutions to program delivery issues.

The intergenerational focus was enhanced through the interactive games. Interactive games were designed to include a cognitive component in the program and as a way for participants to establish rapport with one another and the trainers (Kang & Russ, 2009). Ageism and stereotyping between younger and older adults are common problems, with approximately 84% of older adults experiencing effects of ageism (Ory, Hoffman, Hawkins, Sanner, & Mockenhaupt, 2003). Incorporating meaningful intergenerational interactions helps decrease ageism among younger adults (Francis et al., 2014; Ory et al., 2003) and may increase older adult PA participation (Tan, Xue, Li, Carlson, & Fried, 2006).

A particular recruitment challenge (although a positive programming attribute) was recruiting two generations of attendees. Identifying a well-respected peer and "selling" that person on the program is helpful. Getting this key individual to have an interest in the program and advocate for it can increase success of the program because people are highly influenced by their peers.

In the first year, recruitment was low; in response to managers' feedback, marketing strategies were altered. Flyers and posters were redesigned to incorporate bright colors, larger fonts, and quotes from past participants. Radio announcements, video advertisements, and a website were developed and made available after year 1. Each Extension specialist was given a DVD with the video advertisements to use during recruitment presentations.

Location recruitment was another barrier. As recommended by the National Council on Aging (2006), the most preferred sites were senior community centers or apartments. There is ready access to these sites, and many older adults may be able to walk to the program location (National Council on Aging [NCOA], 2006). These sites typically have large open spaces, so to overcome the "access barrier," the LIFE program was preferentially held in these venues.

Another strategy for increasing recruitment is forming partnerships (NCOA, 2006). Partnerships were vital for increased success of this community-based program and may help increase recruitment of participants, trainers, and locations. Other key support systems included county Extension offices; they can be a source of information and may have former Extension program participants who would be willing to become involved in the program.

Additional recommended program modifications included increasing program flexibility by increasing the exergaming frequency. Throughout the duration of the program, participants were allowed to use the Xbox Kinect outside the arranged meeting times as long as they did not use it alone. Also, managers suggested lowering the minimum trainer age from 16 to 14 or 15 years of age. While the rationale was understandable (i.e., to increase the applicant pool), this change is not encouraged due to safety, maturity, and transportation concerns. The minimum age of 16 was chosen because trainers of that age or older are most likely able to drive themselves and likely have a higher sense of responsibility and maturity than a 14-year-old would have.
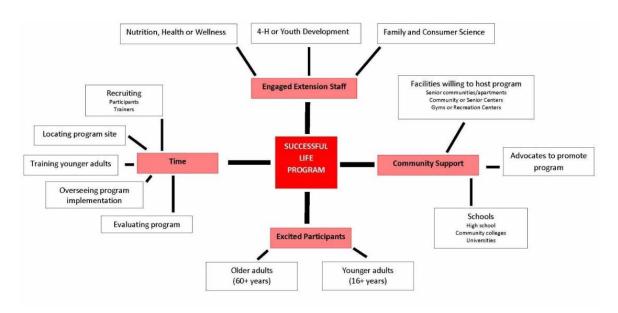
Conclusions

The results of the study reported here suggest that the LIFE program is well received and fills a void in Extension programming. It brings an easy-to-implement, intergenerational PA program for older adults to rural communities. Figure 3 shows the components of a successful LIFE program.

Figure 3.

Components of a Successful LIFE Program

For successful LIFE program delivery, Extension facilitators should take the following actions:

1. Seek leadership and support prior to program implementation.

2. Identify interest within a community, and obtain support from county Extension offices and local schools.

3. Generate community interest.

4. Identify local advocates.

5. Identify sites that are accessible and have private, open spaces; large screens; and parking if a commute is necessary.

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