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## Environmental Influences on Physical Activity in Rural Midwestern Adults: A Qualitative Approach

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### Abstract

Qualitative research can be used to examine multiple factors associated with physical activity and help practitioners identify language used by the rural adult population when discussing this behavior. Three focus groups were conducted among 19 residents of multiple towns in a rural Midwestern county to examine the language and influences on rural physical activity. Focus group members were asked to define physical activity, exercise, community, and neighborhood. They were asked about the activities they engaged in and facilitators and barriers to those activities. A guidebook was developed to capture major themes and common patterns that emerged in the responses to the topics discussed. The data were reviewed for repeated statements and points that were agreed on by multiple participants. Important factors associated with physical activity include the importance of social support and modeling physical activity behavior. Also, the influence of pets and children was important for engaging these adults in physical activity. The focus group members engaged in walking and bicycling in their neighborhood streets and community trails, and desired to see community buildings be open to the public for exercise. This study revealed contextual issues and culturally relevant language for practitioners to use in tailoring physical activity measurement tools or designing interventions for a rural adult population. Social support (specifically, seeing others being active and using pets as motivators for being active) and policy attitudes may be targeted for interventions to increase physical activity in rural adults.

### Keywords

rural health; physical activity/exercise; focus groups; program planning and evaluation; health disparities

### INTRODUCTION

Rural adults are less physically active than urban and suburban residents (Patterson, Moore, Probst, & Shinogle, 2004). Insufficient physical activity is one major factor contributing to obesity and other chronic diseases (Bouchard, Blair, & Haskell, 2007; Patterson et al.,

2004). Limited access to exercise facilities, lower income, and less available information regarding specific benefits of physical activity put the typical rural adult at risk for being sedentary (Whaley & Haley, 2008). These factors may represent attributes of rural culture, and need to be considered in order to develop and implement an effective intervention program to enhance physical activity in this population.

Social cognitive theory proposes that there is a relationship between environments and behavior (Viswanath, 2008), and research has shown a link between environmental factors and physical activity (Nelson, Wright, Lowry, & Mutrie, 2008). Specifically, neighborhood environment attributes, such as the presence of others being active and physical access to exercise facilities, are found to be linked to physical activity behaviors among rural adults (Frost et al., 2010; Parks, Housemann, & Brownson, 2003).

However, much of the research in this area has been conducted in urban communities, even though approximately 75% of the counties in the United States are classified as rural (Glasser et al., 2003). Rural communities are notably different from urban and suburban communities, and unique consideration should be given to them when assessing the relationship between the environment and physical activity (Yousefian, Ziller, Swartz, & Hartley, 2009). For example, in some rural settings, low population density, long distances between destinations, and lack of facilities may combine to discourage active transportation by walking (Yousefian et al., 2010)—issues that may not be as common in more urbanized areas. One recent study found that rural parks scored lower than urban parks on access, lighting, and safety and diversity of play equipment (Veitch, Salmon, Ball, Crawford, & Timperio, 2013), each of which could influence rural adults' activity levels. Additionally, in rural communities and neighborhoods, adult levels of physical activity were positively associated with safety from crime or traffic, as well as the presence of walking trails. In contrast, positive associations in urban communities or neighborhoods were found between adult physical activity and sidewalks, parks, and walkable destinations (Frost et al., 2010). Other environmental issues, such as activity-friendly policies, have not been well studied in rural areas; however, there is some evidence that rural adults support workplaces providing time during the workday for employees to exercise (Brownson et al., 1998). Eyler and Swaller (2012) discuss how community use legislation may influence physical activity, but this has not been studied in rural areas. There is a clear need for more in-depth studies of the rural population.

Qualitative research, including focus groups, may be useful for exploring a variety of issues in one's community that influence behavior (Aronson & Oman, 2004). For example, formative processes may be helpful for determining what questions to include or exclude when developing instruments to assess cultural variables in a community. Research has also shown that increased community involvement when conducting formative research could help facilitate the effectiveness of programs that use social resources to promote physical activity (Zizzi et al., 2006). This is especially pertinent for rural residents given the finding that this population is more likely to be involved in their communities compared to their more urban counterparts (Greiner, Li, Kawachi, Hunt, & Ahluwalia, 2004). In addition, community involvement may be helpful to practitioners for determining appropriate language to use when conducting research tailored for a specific population.

The purpose of this study was, therefore, to use focus group methods to identify the language that rural adults used to define physical activity and related terms, the activities this population engages in, and to explore the context-specific social and physical environmental factors that facilitate and inhibit their physical activity. Focus group questions were designed to explore the social cognitive relationship between environment and behavior. Results may be used to tailor the language used on survey instruments and inform future interventions in this population.

## METHOD

Individuals who resided in one rural county in Southeastern Iowa (defined as a county with no principal city with a population of over 50,000 people) were invited to participate in one of three focus groups. Eligible participants were independent-living, English-speaking adults older than 18 years residing within county limits for at least 1 year. Community leaders across the county were asked to provide names of individuals who might be interested in participating. Also, a countywide obesity prevention task force was solicited for assistance in locating participants. These community leaders and task force members were also sent recruitment flyers to post around their workplace or town. Additionally, flyers were posted in work sites, churches, and libraries and news releases were sent to the four county newspapers. Interested individuals were asked to contact the researchers by phone. Potential participants were screened by phone to determine their eligibility before scheduling the focus groups.

The three focus groups were held in a town located centrally in the county to limit the amount of travel for participants. Research has suggested that at least three focus groups are needed to compare and contrast findings among groups (Krueger & Casey, 2004), and a mix of same-sex and mixed-sex groups should be conducted to produce different, yet complementary insights (Stewart & Shamdasani, 1990). The three focus groups consisted of one mixed-gender group, one males-only group, and one females-only group. All participants were given a \$10 gift card to a local retailer and a small meal to compensate them for their time. The focus groups were audio recorded and transcribed. A trained research assistant assisted with taking notes. Participants were given an informed consent form and answered a brief demographic questionnaire before the focus groups began. All procedures were approved by the institutional review board of the University of Iowa.

### Interview Guide

The interview guide used in this study was developed based on preliminary interviews with community members and prior research studies. It was finalized after expert review and field testing. Participants were asked to define *physical activity* and *exercise*, as these two terms have been used interchangeably and may cause some confusion. Rural adults trying to distinguish between the two had somewhat contradictory insights, and differences between the terms may not be explicit (Aronson & Oman, 2004).

The participants were also asked to define and/or describe their neighborhood and community. Research has shown that rural adults may have different perceptions regarding these terms (Whaley & Haley, 2008), and it is important to explicitly define them in order to

accurately measure environmental perceptions within a neighborhood or community. It is also critical to accurately characterize the context in which physical activity occurs in order to outline factors that may be attributed to neighborhood or individual levels of influence (Li et al., 2005). This enables examination of the relationships between one's environment and their behavior, as guided by social cognitive theory.

Finally, participants were asked to comment on the features and characteristics of their neighborhoods and communities that may facilitate or inhibit participation in physical activity. When necessary, they were given prompts of examples of the types of things that may influence whether one is active (e.g., the presence of sidewalks), and the types of things that may create a barrier to being active (e.g., lack of resources).

### Data Analysis

Transcribed data were reviewed by the lead author and a trained research assistant. A code book was then developed to capture major themes and common patterns that emerged in the responses to the topics discussed. Data were reviewed for repeated statements and points that were agreed on by multiple participants. Lists of responses were created for each focus group, and the data were then summarized in meaningful categories (Aronson & Oman, 2004). Statements were then selected to support specific themes (Dye & Wilcox, 2006). All data were verified by another trained reviewer.

## RESULTS

There were 19 total participants at the three focus groups, and 11 were female. Ages ranged from 27 to 75 years (mean age was 51 years), and all participants were Caucasian. The State of Iowa is 50.4% female and 94% Caucasian (U.S. Census Bureau, 2011). Five out of the eight towns in the county were represented at the focus groups.

Definitions of physical activity and exercise mentioned in the focus groups were similar. Participants in all three groups were able to distinguish differences between these two terms. Physical activity was considered anything that was not just sitting, and many types of daily activities (gardening, cleaning, and mowing) were given as examples of physical activity. Exercise was considered as requiring more effort, causing you to sweat, and as being more structured than physical activity.

Each of the three focus groups also mentioned similar descriptions of neighborhoods and communities, and they were able to distinguish differences between the terms. Neighborhoods were considered the surrounding blocks around where one lives, and in more remote areas the neighborhood was often considered one's property line. Neighborhoods were also defined by natural boundaries, such as parks or schools. Communities were collectively described as the city or town and, in cases of more remote areas, as the general geographic region where one lives.

The most common activities that focus group members discussed engaging in were walking, gardening, and bicycling, and they participated in these activities in their homes, neighborhood streets, and community parks and trails.

## Neighborhood or Community Facilitators

Table 1 presents a summary of themes that emerged from the group discussions. The participants discussed several factors that facilitated or enabled physical activity in their neighborhoods and communities. Chief among these was the social aspect of the presence of others being active. One 42-year-old male mentioned that seeing others being active prompted the thought that “I could do that, too.” In addition, being able to meet and chat with friends was mentioned as a motivator for being active by a 54-year-old female.

Having a pet was mentioned several times in the discussions as a factor that contributed to being active. A 71-year-old male explained this as contributing to the motivation to be active, “because it (walking a pet) has to be done.”

Several participants in each focus group stated that sidewalks provided access for walking or biking in their communities. Other participants discussed using neighborhood streets for walking or biking because sidewalks were too narrow, and a lack of traffic making it safer to walk or bike on streets.

In addition to sidewalks and streets, several participants in each focus group identified a local trail as providing access to being active. The trail was discussed as a destination itself, and also as a means to a variety of other destinations, including neighboring communities. Although not explicitly stated, it was implied that having destinations nearby influenced how much community members walked. For example, one 59-year-old female said,

It’s a mile and-a-half from my house to walk to get to downtown so I walk down to the library, I walk down to the bank, I walk down if I need some chocolate milk. We seldom take our car because everything’s so close.

## Neighborhood or Community Barriers

Some of the factors that were discussed as inhibiting physical activity included narrow sidewalks, lack of resources and facilities, roads that were muddy or had loose gravel, and being self-conscious. It was mentioned that many people walk with another person, and narrow sidewalks could not accommodate that. Others mentioned a lack of sidewalks made it difficult to walk in their community, and busy streets with lots of traffic created a barrier to walking on streets where no sidewalks existed. Each focus group separately mentioned difficulties associated with cycling, including loose gravel on the roads, rumble strips on road shoulders, and a lack of bike racks. For example, one 50-year-old male participant noted, “There are 600 and some parking spots at the high school ... and there’s not a bike rack in the place.”

Three interesting findings were discussed regarding policy-level influences on physical activity. First, a lack of community planning was identified by a 36-year-old male as potentially limiting the number of parks and facilities available. Second, there was a desire to use school facilities to which members of the public had limited access. Not only could the participants not use some of the facilities paid for with local tax dollars, but several of the facilities, such as swimming pools, were reserved for school team practices during desired time periods, further limiting access to these facilities. Third, although participants

mentioned that they did not mind driving to exercise facilities, they disliked having to pay to use these facilities. For example, one 32-year-old female stated, “I don’t go to the gym because I have to pay for it.”

Two factors were discussed as being both potential facilitators and barriers to being active. Children were mentioned in all of the focus groups separately as a possible motivator for modeling active behavior; however, it was pointed out that although many community resources exist for children to be active, such as youth sports programs, few of those resources are accessible to adults. Additionally, having to take care of children was mentioned as time-consuming and making it difficult to have time to be active. Safety was also mentioned as facilitating activity because community members can get out in the streets if they are safe; however, crime and a lack of safety have also inhibited the ability of residents to get out and be active. Some adults mentioned having no traffic; yet others mentioned living near highways that included dangerous traffic operating at high speeds.

## DISCUSSION

The goals of this study were to explore and understand what social and physical environment factors may influence physical activity in rural adults, and what language may be culturally appropriate for future physical activity research in this population. It was found that participants in this study defined physical activity as similar to activities of daily living where one is moving around and not just sitting. Exercise was defined as more structured and as including more effort and sweating. In contrast, one study showed that older rural adults viewed physical activity as more strenuous than exercise (Aronson & Oman, 2004). These findings point to the need to consider the language that is used when designing physical activity studies in rural adults (Aronson & Oman, 2004; Hooker, Wilson, Griffin, and Ainsworth, 2005).

The most common activities that participants reported engaging in were walking, gardening, and bicycling, which supports the findings from Dye and Wilcox (2006). Other research indicates that interventions to improve walking behavior in rural communities may be effective at increasing physical activity (Brownson et al., 2005). Considering that having a place to walk to was mentioned in these focus groups, interventions could focus on promoting or developing destinations in rural communities that can be accessed by foot.

A lack of sidewalks was supported by previous research findings of rural-dwelling senior citizens and a random sample of rural adults (Aronson & Oman, 2004; Whaley & Haley, 2008). The adults in this study mentioned walking in the streets, which is supported by another study that reported that rural adults adapted to poorly maintained and limited sidewalks by walking on the streets (Gangeness, 2009). Other results, such as the narrow sidewalks, have not been discussed in the literature, which shows a need for further research looking at the associations between the perceived presence and maintenance of sidewalks and physical activity in rural areas.

Participants named several other environmental factors that influenced whether they were active, including the availability of facilities and resources for being active, such as trails

and schools, which provides support for research guided by social cognitive theory. Existing literature has suggested that the presence of recreational facilities, trails, or parks was among the most relevant environmental elements associated with physical activity in rural adults (Frost, 2010). Thus, increasing access to places to be active might improve rural adults' participation in physical activity pursuits. Also, for communities that already have several existing resources where residents can be active, increasing awareness of these resources may be a cost-effective method for increasing activity levels (Addy et al., 2004).

Having destinations, including walking trails considered as a destination, seemed important to these participants. Destinations refer to land uses that can be accessed in daily life for shopping, education, work, and recreation purposes and have been positively associated with active transportation (Sallis, Floyd, Rodriguez, & Saelens, 2012). Interestingly, having to drive to places for exercise did not seem to be a barrier to being active. The rural adults mentioned that they were used to driving to get to places, suggesting that this may be a unique characteristic of rural culture that could be considered when designing an intervention in this population.

Social factors were frequently mentioned, including the presence of others being active. This is supported by the finding that older rural women often preferred to be motivated by others being active (Dye & Wilcox, 2006). Also, rural adults who perceived their neighbors as being active were twice as likely to meet physical activity recommendations, compared with those who did not perceive their neighbors as being active (Hooker et al., 2005). A key concept from social cognitive theory is that of observational learning, or behavior modeling, which refers to the capacity to learn behavior from observing others, and then enacting those behaviors (Viswanath, 2008). It was clear from these focus groups that rural adults valued seeing and observing others being active, and interventions could examine ways to direct more attention to active individuals being more visible in their communities. Additionally, a previous analysis of a sample of rural Midwestern adults found that women were more likely to exercise with someone than men, and they usually exercised with their friends (Chrisman, Nothwehr, & Schultz, 2011). Men who exercised with someone usually did so with their spouse or partner, and these areas of social support could be targeted for intervention. Taken together, these findings suggest that changing the social norms for physical activity may help increase rates of physical activity in rural adults.

Other studies have found that social support from children plays a role in encouraging physical activity in rural adults (Kegler, Escoffery, Alcantara, Ballard, & Glanz, 2008; Laroche & Snetselaar, 2011). In addition, there is evidence that for some rural parents, children interfered with their ability to exercise (Laroche & Snetselaar, 2011). Participants in this study mentioned that as parents, they were often busy taking their children to various activities, but these activities were not available to them. Interventions could provide active pursuits for adults while their children are at recreational or competitive sporting activities, enabling parents to model active behavior to their children and adult peers.

Pets were mentioned as possibly creating a motivation for being active. Research has shown that a weight loss intervention centered on people and pets exercising together was effective in weight loss through physical activity and social support (Kushner, Blatner, Jewell, &

Rudloff, 2006). Future research could examine the efficacy of using pets to increase physical activity in rural adults. Interestingly, only men suggested pets as providing a means to be active, whereas women expressed the sentiment that loose or wild animals often prevented them from being active. It is not clear as to why only men suggested pets as influencing physical activity; however, it does provide a possible target for intervention, especially as the participants suggested the necessity of taking their pet for a walk. Considering the importance of social support for physical activity in rural adults and the lower population density of rural areas versus urban areas, there is potential for using pets to increase support for physical activity in this population.

There were mixed findings regarding safety from crime and traffic influencing when and where community members were active. These factors have been positively associated with physical activity in rural adults (Addy et al., 2004), and it has been found that rural adults who reported their neighborhood as safe were almost twice as likely to report meeting physical activity recommendations than those who reported their neighborhood as not safe (Hooker et al., 2005). Some participants felt safe enough to walk on neighborhood streets; however, others felt that high amounts of traffic prevented them from walking on streets.

One major finding of this study that has not been discussed extensively in the literature is the desired access to the public facilities paid for with tax dollars. This shows the need for policy-level interventions to create shared-user agreements between local governments, schools, and communities. Allowing access to school spaces and facilities through joint agreements is a recommended strategy in the *Healthy People 2020* goals for improving the nation's health (U.S. Department of Health and Human Services, 2010). Such agreements provide an opportunity for practitioners to combine resources to meet a community's needs, and might be particularly relevant in rural areas, where schools may be regarded as a central focus in the communities. Research has shown that rural women viewed public schools as a safe place for physical activity (Gangeness, 2009), and that community use agreements between schools and a city or private organization can help increase opportunities for physical activity among community members (Eyler & Swaller, 2012). Future research should examine how to use opening schools or other facilities to the public as a strategy to promote physical activity.

### Limitations

This study was limited by the small, yet diverse sample. Due to a wide age range, it was not possible to identify age-specific concerns. Participants appeared well aware of the physical activity resources and facilities in their county, and they might have been more likely than the general county population to use these resources for being active. Therefore, generalizability may be limited. Physical activity levels were not assessed in this study, and it is not possible to determine whether the findings apply to both active and inactive individuals. Participants were encouraged to disclose any opinions on the discussion topics, but statements made may have been socially desirable or inaccurate. Finally, only three focus groups were conducted, and different themes might have emerged with more focus groups or participants.



## CONCLUSIONS

This study revealed important contextual and language issues that can help guide future physical activity research for rural adults. Findings can be used to help researchers and practitioners implement existing, evidence-based programs tailored for rural communities. This study may also help researchers, practitioners, and program evaluators become more cognizant of how programs may need to be adjusted for the rural population—for example, it is important to define terms such as *physical activity* and *exercise*, as well as *neighborhood* and *community*, in order to ensure that measurement tools are using appropriate language that accurately portrays how community residents define these terms. Results of this study can be used to inform researchers and practitioners on potential intervention strategies and tailor new and existing physical activity instruments to the rural adult population, especially when guided by social cognitive theory. Increasing social support in the community (including support from children and pets), having and maintaining destinations for active transport (including sidewalks and trails), and creating policies that allow for public use of existing facilities such as schools can all be targeted for increasing physical activity in this population.

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**TABLE 1**

## Themes and Supporting Factors From Rural Adult Focus Groups

<b>Theme</b>	<b>Supporting Factors</b>
Neighborhood and community facilitators for physical activity	Seeing others being active, having to walk pets, having access to sidewalks/streets/trails
Neighborhood and community barriers for physical activity	Narrow sidewalks, unsafe traffic, lack of resources, time commitments for children
Policy concerns	Lack of shared-user agreements between facilities and communities, having to pay for gym memberships