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Perspectives on Physical Activity and Exercise Among Appalachian Youth

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Abstract

Background—Most children in the United States receive far less physical activity (PA) than is optimal. In rural, under resourced areas of Appalachian Kentucky, physical inactivity rates are significantly higher than national levels. We sought to understand children’s perceptions of PA, with the goal of developing culturally appropriate programming to increase PA.

Methods—During 11 focus groups, we explored perspectives on PA among 63 Appalachian children, ages 8–17. Sessions were tape recorded, transcribed, content analyzed, and subjected to verification procedures.

Results—Several perspectives on PA emerged among these rural Appalachian youth, including the clear distinction between PA (viewed as positive) and exercise (viewed as negative) and an emphasis on time and resource factors as barriers to adequate PA. Additional PA determinants expressed in the focus groups are similar to those of other populations. We include children’s recommendations for appealing PA programs.

Conclusions—Appalachian and other rural residents contend with the loss of rural health advantages (due to declines in farming/other occupational and avocational transitions). At the same time, Appalachian residents have not benefitted from urban PA facilitators (sidewalks, recreational facilities, clubs and organized leisure activities). Addressing low PA levels requires extensive community input and creative programming.

Keywords

community-based research; interventions; adolescents; focus groups

Physical inactivity is associated with a variety of physical and mental health problems, including overweight and obesity, heart disease, diabetes, high blood pressure, depression,

and anxiety.¹⁻³ Despite these consequences, American youth do not engage in recommended amounts of physical activity (PA). Less than 20% of US youth reported participation in 60 minutes or more of vigorous PA for 7 days of the previous week, while 23.1% indicated they did not participate in at least 60 minutes on any day of the previous week.⁴

Kentucky residents in general, and those living in the state's Appalachian region in particular, face disproportionate burdens of low PA. Significantly fewer Kentucky children engage in daily PA compared with their national counterparts (25.9% vs. 29.9%).⁵ This pattern of low levels of PA continues and intensifies into adulthood; 36% of Appalachians report no leisure time PA, compared with 28.1% of non-Appalachian Kentuckians and 22.3% nationally.⁶

Youth PA levels have been associated with individual characteristics (male gender, low socioeconomic status, intentions to be physically active, reinforcing value, high self-efficacy, perceived competence, and enjoyment), interpersonal factors (social support, sibling PA, and parental weight status), and structural influences (access to programs, the built environment).⁷⁻¹⁰ Rural residency, especially in the southern US, has been associated with low levels of PA.¹¹

Barriers to engaging in adequate PA specific to Appalachia are not well-characterized, but research with other underserved populations has identified personal factors (eg, caregiving responsibilities, lack of time and resources, and self-consciousness)¹² and characteristics of the social and physical environment (eg, lack of access to appropriate facilities, unsafe neighborhoods, poor weather, and inadequate programming and activities)¹³ as key barriers to adequate PA. On the other hand, facilitators of PA in underserved populations include enjoyment, self-efficacy, motivation, social support, family involvement, and access to facilities,¹⁴ as well as cultural norms and traditions that encourage PA.¹⁵

The magnitude of the problem of low PA in Appalachia, coupled with the unique cultural, economic, and environmental characteristics of the region, calls for special attention to the barriers to and facilitators of successful PA interventions. Although there are some investigations elucidating factors that affect PA participation among children in other rural regions,¹⁶ there is little research indicating what is specific to rural, Appalachian children that explains their inactivity (for exceptions, see¹⁷⁻¹⁹). This study explores Appalachian youth's perceptions of PA, providing vital information for the development of effective and acceptable PA interventions in this and other rural regions.

Methods

Focus groups were used to solicit insights into Appalachian youth perspectives toward PA. Focus groups, along with other qualitative methods, are ideal for gaining an understanding of local perceptions and experiences, with group interaction often leading to deeper insights than could be reached by individual interviews or survey research.²⁰ This research moved beyond knowledge and attitudinal factors, drawing instead on the ecological model of health behavior,²¹ which acknowledges the influences of a range of factors from the personal

(microsystem) to the societal (macrosystem). All protocols were approved by the University of Kentucky Institutional Review Board.

Setting

The study was located in the central portion of Appalachia, a region comprising 410 counties in 13 states, with 22 million people or approximately 8% of the US population.²² Central Appalachia (which includes all of Kentucky's 54 Appalachian counties) tends to have both positive features of traditionally supportive and close knit family structures, physical beauty, local efforts at community improvement, and negative realities of poverty, low educational attainment, and poor health. The 5 counties in which these data were collected have socioeconomic status and health indicators among the lowest in the US, with average per capita incomes ranging from 55%–67% of the average US income, and high school graduation rates of 58% compared with 80% in the nation.²³ Diabetes prevalence ranges from 10%–15% in the study counties compared with 7% in the US overall.²³ Cardiovascular disease (CVD) mortality averages from 132%–157% of the national CVD mortality rate, and cancer deaths in the participating counties exceeded US rates by between 30–47 excess deaths per 100,000 people each year.²³ The strong association between low levels of PA and these poor adult health outcomes³ emphasizes the importance of designing culturally relevant PA programs that address the specific barriers faced by this underserved population.

Sample and Recruitment Protocols

Focus group (FG) participants were recruited through area churches and community centers. Church attendance in the region is widespread,²⁴ allowing access to a broad cross-section of the population. To ensure inclusivity, 2 of the 11 focus groups were held in community centers. Inclusion criteria included being 8- to 17-years-old and being willing and able to participate in a FG. Participants were not required to be church members, since many church attendees lack formal membership. Before the focus groups, 8 local residents, also ages 8–17, completed in-depth interviews to assess their preferences for focus group conduct and to pilot test the interview guide.

Staff initiated discussions with church representatives; upon agreeing to host a FG, pastors or other church leaders announced the project from the pulpit or through church bulletins by requesting that parents or guardians and their children join a discussion group on a designated day. Two local community centers also posted fliers inviting youth to participate in focus groups at those centers, with center staff also encouraging participation by word of mouth. Researchers did not select participants nor exclude anyone meeting inclusion criteria.

Sample size was guided by theoretical saturation, or the identification of no newly emerging data.²⁵ A total of 11 focus groups with 63 children were conducted, with 4 focus groups for children 8–10 and 15–17 and 3 focus groups for 11–14 year olds. In accordance with the children's input during the in-depth pilot interviews, most of the focus groups were small (4–6 participants each) and were separated according to age. Based on recommendations from the children's interviews, the research team decided to include both boys and girls in all focus groups.

Data Collection

Community-based staff with extensive experience organizing and moderating focus groups conducted the 11 sessions over 4 months. Two primary moderators conducted all of the sessions, with 2 additional experienced staff members assisting them in collecting paperwork, taking field notes, and writing memos. The moderators spent the first several minutes orienting parents and their children to the goals of and expectations of conduct for the focus group. Parents/guardians and youth participants were asked to sign informed consents or assents, respectively, and both adults and youth were asked to complete sociodemographic information sheets. Youth were then separated from parents for the duration of the focus group session; although parents had the option of accompanying their children to the session; no parents chose to do so. Focus group questions were developed by the research team and refined based on the 8 in-depth interviews conducted with local youth. Four domains were emphasized in the discussion: semantic/cognitive constructs [for example, ‘exercise’ versus ‘physical activity’ (PA) and conceptualization of PA]; perceptions of engaging in PA; determinants of PA; and recommendations for programs designed to increase PA. Specific questions included: What does “exercise” mean to you? What are some examples? (Repeat for PA). What do you like about exercise/PA? What don’t you like about exercise/PA? What are some things that KEEP you from doing PA/exercising more? What are some things that help you do PA/exercise MORE? If we were setting up a program here in XX County to try to help kids get more PA/exercise, what kind of a program do you think would be good? What should we keep in mind when we are planning this PA/exercise program?

The following steps were taken to ensure consistency among the 11 focus groups: the same moderators were present at all sessions; 1 discussion guide was used; transcripts were reviewed immediately to detect deviation from or incompleteness of the discussion guide; and, periodically, outside investigators attended the sessions.²⁰ Most sessions lasted 45–60 minutes. All notes taken by the staff were conveyed to the investigative team and used as contextual description.

Data Analysis

With the permission of the children and their parents/guardians, all FG sessions were tape recorded. To enhance the rigor and transferability of the data collection and analysis, member checks were conducted by summarizing what was said at the completion of each session and asking participants if the team was asking relevant questions and comprehending the group’s messages.²⁶ The tape-recorded sessions were transcribed by local, trained transcriptionists and reviewed for accuracy by the community staff. The use of member checks and community staff to confirm that the focus group data reflected local realities is an example of triangulation, an important means of reducing measurement error.²⁷ The transcripts were then imported into NVivo (QSR, Melbourne, Australia) for coding, organization, and analysis. Coding began with one researcher engaging in line-by-line coding of the transcripts, affixing codes to each text segment. Codes were defined and refined, leading to the development of a preliminary codebook. The codebook encouraged standardization of the content analysis and served as a record for definitions and operationalization of codes. Further refinement of the codebook ensured that codes were

consistently interpreted and applied across transcripts.²⁶ Finally, transcripts were cocoded by 2 researchers as they refined the codebook, attaining a final interrater reliability of 94%.²⁸

Results

Sample Description

All demographic information was derived from the children's questionnaire. Fifty-five percent of participants were female; 87% identified themselves as White (the remainder self-identified as either mixed race or African American). Twenty-one children were age 8–10, 19 children were 11–14, and 23 children were 15–18. The average household included 4 people, and 63% of the children lived with both of their biological parents. Forty-two percent of the youth perceived that their family had more than they needed to live well, 23% believed their family had enough money to get by, and 18% perceived their family as having to struggle to make ends meet. The remaining 18% either did not respond or did not know their family's financial status.

Several key themes emerged about youth perspectives toward PA, some consistent with other research findings and others representing new insights. This article highlights those novel or previously unreported themes, along with particularly prominent themes previously identified by other research.

Perceptions of PA: Descriptions and Distinction Between PA and Exercise

Participants across focus groups offered a clear evaluative distinction between PA and exercise, with the former evoking more positive associations than the latter. A boy in the 15- to 17-year-old group noted: "Exercise you have to push yourself to do it and physical activity would be more sports oriented and you burn calories and get healthier, and have fun at the same time." Two girls in the 15- to 17-year-old group made similar remarks, characterizing PA as fun rather than laborious: "Exercise, you're doing it at a certain time for a certain reason and physical activity, you're doing it just have to fun or just to do something." and "Exercise is something that you think you might have to do. But physical activity is just something that you want to do. And that you have fun doing." These perspectives were echoed by those in the next youngest age group (11–14): "Exercise is not like fun, it's like tiring and once you get done exercising you don't want to play anything, you're already tired. Like in our gym class we stretch too much so nobody wants to play anything but we have to. Physical activity, that's like fun, it's like free-spirited, and you're just having fun."

In addition, participants emphasized that having choice or self-direction was characteristic of PA, but not of exercise; therefore, PA was associated with leisure time while exercise sometimes was associated with required activities, as in school. A girl in the 15- to 17-year-old group noted, "Physical activity is like you choose to do it and exercise you just have to do for a reason or it's healthy.... Like PE." A boy in the 8- to 10-year-old group explained, "Exercising is like doing exercises and stuff and being physically active is you can do what you want to do, just going around and playing and stuff."

Other distinctions were made between PA and exercise, namely that PA might be unintentional; that exercise often entails a specified quantity and quality of energy expenditure; and that PA often involves others, most specifically family and friends. Making the distinction between PA and exercise, a boy from the 11- to 14-year-old group noted, "... physical activity is like doing stuff with groups ...like just walking in groups and exercise is just doing something yourself." As another boy from the 11- to 14-year-old group noted, "It's (PA) exciting, it keeps you out of trouble, you get to spend more time with your friends. Give your parents some alone time, give them a break, let them talk. You might get on your parents' nerves like I know I do." And a girl from the 15- to 17-year-old group described PA as "You're doing something you can do with friends. You don't have to do it by yourself."

Barriers to PA Participation

Youth mentioned numerous barriers to engaging in PA, including psychological factors, inadequate knowledge, and lack of resources. Psychological barriers included poor motivation and anticipation of pain or injury. For example, a boy from the 11- to 14-year-old group noted, "I don't like that sometimes if you work too hard, you get exhausted, you can't breathe, you get a lot of cramps, you puke." Another boy from the same group noted, "you ache and pain all over." Participants also mentioned a lack of knowledge and no one to instruct them on programs. One boy from the 15- to 17-year-old group noted, "...for those of us that don't know how to do anything, there's nobody to teach us how to do it." In addition to these individual level barriers, participants also cited structural barriers specific to their Appalachian communities, including insufficient community facilities and isolation. A boy from the 15- to 17-year-old group explained, "...we have nothing around here that will actually get people excited about stuff," while a girl from the same age group noted, "all you have is walking up and down the hollers [mountain valleys]. And everything's too far away."

Youth also highlighted barriers typically described by adults and those from more urban environments, including lack of time, technology (screen time) that interferes with PA, and high costs associated with PA programming. A girl from the 15- to 17-year-old group noted, "I've got better things to do, like Internet and stuff. Well, that's not better things to do, but it's a thing you want to do more." A boy from the 8- to 10-year-old group acknowledged that his first priority when he is not in school is to play "video games, TV, computer, all that stuff. That's what I usually do, sitting around the house all the time." Finally, many participants perceived the expenses associated with PA to be beyond their household's capacities. A girl from the 11- to 14-year-old group acknowledged that although her family could afford to purchase athletic equipment, others were not so fortunate. "A lot of kids can't do it because of the money. Like my costume for ballet was \$60. And if you want to do ballet, you have to buy leotards and stuff like that." When exploring possible programs to enhance PA, 2 girls from the 15- to 17-year-old group suggested, "You'd have to do it (programming) for free because nobody want to pay for nothing around here," and "Yeah, we could not pay no fees because we're just broke."

Facilitators of PA and Attributes of PA Programs

Like barriers, several facilitators supporting PA cited by participants conformed to existing research, including physical and mental health benefits, amusement, and sociability. As described by participants from the 11- to 14-year-old group, PA "...actually makes you feel better. If you want to, it helps you lose weight" (boy); "sometimes it may help you to sleep better, if you're having trouble..." (girl); and "...you won't get depressed. It gets your mind off of it" (boy).

According to participants, programs that hold promise for enhancing PA should have certain characteristics. Programs should be enjoyable ("I think the main thing to do is just keep it fun. You don't want to make it too hard to where people are going to give up. Just keep it fun and exciting" said a girl from the 15- to 17-year-old group) and measure progress ("make graphs that say what people's done" suggested a boy from the 11- to 14-year-old group). Participants across the age groups emphasized the need for fellow program participants and leaders to be supportive and energetic, to allow people of all skill and fitness levels to participate, to encourage goal setting, and to start with modest activity levels. Participants emphasized the need for social interaction ("I like to walk as long as I have a friend beside of me to talk to while I walk" remarked a girl from a 15- to 17-year-old group). Negative attributes include a "dorky name" for programs, boring or repetitive activities, school-like programs, and any activity that is forced or mandatory.

Participants also emphasized features of the physical environment that would encourage PA, including colorful facilities or space with music, convenient and accessible location, and flexible hours. Offering incentives and healthy snacks would be positive; low cost or free membership would be optimal. Promising programs included dance classes (although boys suggested these activities would only be attractive to girls), community gardens, buddy programs, and exercise classes ("I would be willing to go to an exercise class so I could learn more about it, and then we could go to school and show other people" noted a girl from a 8- to 10-year-old group). Although some participants emphasized weight loss programs, many more children focused on tracking progress through charts, physical measurement, pedometers, computer tracking, etc. As a boy from a 15- to 17-year-old group remarked, "If you're doing exercises for people to get in shape, you might want to keep a list or something to show how much they've improved, cause that might inspire them to do more."

Discussion

Several novel findings emerged from this research, including that Appalachian youth experience many of the same personal and societal barriers to PA as their urban counterparts. The paradoxical situation of rural residents receiving less PA than urban residents is a function of technological and economic change in rural America. The mechanization of agriculture and other traditional Appalachian livelihoods, as well as the widespread decline in farming in the region²⁹ means that few residents of the region are receiving sufficient PA from their jobs or daily lives.

While some PA barriers and facilitators were similar to those of other populations (lack of motivation, enjoying physical, social, and mental benefits of PA), other factors emerged as particularly novel or salient for these rural Appalachian youth, including the preference for “physical activity” as opposed to onerous “exercise,” the need to integrate social interaction with PA, and the importance of overcoming resource deficiencies and terrain challenges.

The positive associations with the term “physical activity,” in contrast with the term “exercise,” suggests not only the appropriate terminology to use in intervention design, but also the key characteristics intervention activities should strive to attain—fun, variety, and choice. While the strong distinction between physical activity and exercise has not been reported among other populations, the emphasis on choice and on the social, interpersonal factors that make PA more enjoyable has been found by a number of researchers.^{30,31} For example, having fun with friends was a key message in CDC’s VERB campaign, a social marketing effort designed to appeal to “tweens” ages 9 to 13.³²

Our findings also extend existing literature by moving beyond attitudinal or knowledge barriers to PA and emphasizing the importance of addressing community-level challenges. To overcome the frequently mentioned barriers of inadequate facilities and resources will take creative planning. Many times, school buildings, housing gymnasiums, tracks, and playing fields are among the only locations for PA in rural areas. Some communities are starting to implement joint-use agreements, which strive to resolve the liability and other concerns of school authorities and allow community-wide use of school facilities, although the growing interest in this approach has yet to translate into widespread adoption of such arrangements.³³ Other ideas suggested by participants involve resource expenditures. For example, tracking PA levels, a strategy supported by other research,³⁴ is often conducted online, raising questions about whether this is a viable approach in communities where access to high-speed Internet service may still be lacking.³⁵ On the other hand, participants’ consistent and frequent mention of the importance of programs that incorporate positive social interactions may allow communities to use economies of scale by ensuring greater participation. In rural communities where youth may not be geographically close to each other, such as those found throughout the mountains of Appalachia, special attention needs to be paid to ensuring that PA programming is accessible, sustainable, and socially oriented.

The physical environment in rural communities such as those found in the study region is, quite often, unsupportive of regular PA. Unlike cities, rural areas tend not to have the sidewalks, easily accessible parks, commercial and public recreational facilities, and various organized recreational leisure opportunities commonly found in urban areas. At the same time, Appalachian youth are subject to many of the same pressures that discourage all adolescents, regardless of geographic location or socioeconomic status, from obtaining adequate PA, including the popularity of television, video games, and computers.³⁶ The disparities created by exposure to factors that discourage PA (screen time, time pressures from school or paid employment) and limited access to factors that facilitate PA (adequate activity centers, knowledgeable instructors) create even more barriers to PA among Appalachian youth.

Several limitations to this research should be noted. As discussed above, because this research is specifically focused on Appalachian Kentucky, it is unclear how generalizable these findings are to other regions of the US. While our findings are consistent with other studies of youth PA, they do suggest benefits from tailoring programming to specific communities. In addition, because FG members were not selected randomly, it is possible that the themes emerging from the group discussions are not representative of all sectors of central Appalachian society. However, these themes recurred throughout the 11 focus groups and irrespective of gender or age groups, suggesting their relevance across community sectors. Extensive community input and involvement must be solicited to develop effective programming to promote PA. In addition, the variability of physical and social environments, including such factors as access to fitness facilities and the social desirability of PA within Appalachia, suggests that the most effective PA promotion programs are likely to be those tailored to specific communities. Future research in Appalachian and other disadvantaged regions should include best practices in community-based programming and research, to ensure that local perspectives are incorporated into physical activity promotions.

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