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Perceived Facilitators and Barriers for Physical Activity in Neighborhood Environments: A Focus Group Interview

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Abstract : Background: The purpose of this study is to explore how people perceive neighborhood environment as facilitators and barriers for their physical activity through focus group interviews. **Methods:** Three focus group interviews were conducted using purposive sampling to explore different perspectives by sex, various ages, and employment status. Focus group participants engaged in physical activity in their neighborhood of Seoul metropolitan area were recruited. Focus groups were conducted until no new themes and categories emerged. Themes of the study were extracted with content analysis. **Results:** Twenty-one participants took part in the three focus groups with the mean age of 49.6 years. Content analysis identified two main themes, facilitators and barriers. Facilitators in the neighborhood included three sub-themes: free access, places to spend time with family, and open areas for physical activities. Barriers included four sub-themes: accessibility problems, dissatisfaction with facilities, feeling unsafe, and places built as bureaucratic displays. **Conclusions**: People recognize that various elements of their neighborhood environment play important roles in their desire to engage in physical activity. To promote people's physical activity and health, nurses should actively participate in policymaking and intervention studies relating to the structuring of neighborhood environments. actions today affect both the present and future generations.

Key words: Neighborhood environment, Urban area, Adults, Qualitative study

1. Introduction

Individuals' motivations and beliefs are important contributing factors that can influence their engagement in physical activities. Furthermore, in the last decade, research has increasingly emphasized the importance of environmental factors: neighborhood environments can motivate and promote residents' physical activities and health outcomes (Byeon, Park, & Choi, 2010; Lee, Ahn, & Chun, 2011; Lee & Ahn, 2008; Lee et al., 2008; Saelens, Sallis, Black, & Chen, 2003; Van Cauwenberg et al., 2011).

The "neighborhood environment" refers to not only the physical environment but also the emotional and psychological aspects of that environment (i.e., how it influences residents) and the relevant policies that might affect residents' physical activities (Humpel, Owen, & Leslie, 2002; McCormack, Rock, Toohey, & Hignell, 2010). In urban settings, it is particularly important for such environments to include sidewalks, adequate traffic flow, cleanliness, sufficiently maintained public spaces, perceived safety and community security, zoning, and land use mix (Sallis et al., 2009).

Regular exercise is highly recommended for maintaining individuals' health and wellbeing, because it improves cardiovascular system function and reduces the risk of health problems such as hypertension and obesity. It also has positive effects on mental health, diminishing anxiety and depression (Cho & Kang, 2009; Chodzko-Zajko et al., 2009; Lee, Ewing, & Sesso, 2009; Paterson, Jones, & Rice, 2007; Vogel et al., 2009). In order to promote regular exercise and

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healthy living on a national level, the government of South Korea has adopted "Health Plan 2020," a policy framework that encourages healthy activities to reduce risk of future health problems and improve health and wellbeing (Korea Ministry Health Welfare, 2009). However, despite these efforts, the most recent Korean National Health and Nutrition Examination Survey revealed that the prevalence of walking and moderate to strenuous exercise among adults over 19 years of age has decreased in the last 10 years (Korea Ministry Health Welfare, 2011). This finding indicates that it is important to identify those factors that affect people's physical activity, and then to promote those factors that positively affect it, while avoiding factors that negatively affect it.

The way that residents think about their neighborhood environment in terms of how it promotes physical activities is important, and it varies from person to person: each individual's perspective creates a different physical activity experience. Therefore, it is essential to consider residents' differing appreciations for their neighborhood environment, as these insights can provide direction on how to improve neighborhood environments to enhance residents' experiences and desire to engage in activity.

Qualitative approaches are effective for understanding people's perceptions and experiences in neighborhood environments (McCormack et al., 2010). So far, most qualitative studies relevant to this field have been conducted in Western countries, mostly in the United States (DeGuzman & Kulbok, 2012). However, these previous findings have only limited application for a city with a high population density like Seoul, South Korea, where the physical environment and culture differ substantially from the cities studied previously. Thus, the purpose of this study is to explore which elements of neighborhood environments act as facilitators and barriers to physical activity, by conducting focus group interviews with community residents who regularly engage in physical activity.

2. Method

This qualitative study utilized focus group interviews in which participants described their daily physical activities in their surrounding neighborhood environments. Because we assumed that people might engage in physical activity differently based on their employment status, participants were recruited using purposive sampling to reflect different perspectives from men and women of various ages and employment status. Individuals who did not have any acute disease or psychological disorder were eligible. We contacted key personnel who were managers at a healthcare facility, a college, and a community leader of an apartment complex to recruit their colleagues for each group. Thus, we conducted three focus group interview sessions with participants who were living in Seoul, South Korea, and who either regularly or irregularly participated in physical activity. The first group consisted of seven male office workers in their 30s and 40s, the second group of six female blue-collar workers in their 50s and 60s, and the third group of eight female homemakers in their 50s and 60s.

Data were collected in January and February 2012. Before conducting the interviews, the investigator, moderator, and research assistants shared information about the procedures for each focus group interview, and developed core questions. The interview was semi-structured, and the core study question that participants were asked to answer was "What kind of experiences do you have when engaging in physical activity in your neighborhood environment?" followed by "What do you think are the facilitators and barriers for these physical activities?" The interview was conducted in a quiet place familiar to the participants, and each lasted about 60 to 90 minutes per group until the saturation point for data collection was reached.

Before starting focus group interviews, the study purpose and all ethical considerations were explained, and participants gave their written informed consent. This study was approved by the ethics committee of Yonsei University College of Nursing (IRB No. 2011-0014).

During the interview, every participant was encouraged to respond at least once to ensure that each person took an active part in the open discussion. Each focus group session was recorded with a digital

recorder, and the discussion was transcribed into written form after each session. In every discussion, a research assistant observed and took notes on participants' reactions, non-verbal expressions, attitude, and interactions, which were later analyzed along with the other data. All data were confirmed and summarized based on a comparison with the digital recording and the on-site notes.

The data were analyzed using content analysis, in the following three steps. First, we identified all data that related to the facilitators and barriers. The second step was to combine and catalogue related patterns into sub-themes. The last step is to build a valid argument for choosing the themes. To ensure reliability, the results were drawn only after each investigator conducted a comprehensive review and engaged in extensive discussion at every analysis stage. We also repeatedly reviewed the source data contents to confirm that the description and expression had been recorded accurately.

3. Results

Table 1 shows participants' characteristics. Twenty-one participants (7 men and 14 women) who were usually interested in and often tried to engage in physical activities participated in the three focus group sessions. The average age of participants was 49.57 years (SD = 13.34). The mean frequency of physical activities was 2.95 times per week, and the mean duration was 140.5 minutes per week. The physical activities included walking (50.0%), running (29.2%), biking (16.7%), and others activities such as soccer, baseball, aerobic (cardio) exercise, and stretching.

Participants' perceptions of their neighborhood environment during physical activity were categorized into two major themes: facilitators and barriers. Facilitators for physical activity included three sub-themes: free access, places to spend time with family, and open areas for physical activities. Barriers included four sub-themes: accessibility problems, dissatisfaction with facilities, feeling unsafe, and areas built as bureaucratic displays.

3.1. Facilitators of Physical Activity

Most participants reported that exercising in a neighborhood environment was essential for their

Table 1. Characteristics of Articipants (N = 21)

Variable	Categories	n	(%)	Mean±SD
Gender	Male	7	(33.3)	
	Female	14	(66.7)	
Age (yr)	39 ≥	6	(28.6)	49.6±13.3
	40-49	2	(9.5)	
	50-59	8	(38.1)	
	60 ≤	5	(23.8)	
Type of residence	Apartment	16	(76.2)	
	Detached house	3	(14.3)	
	Multi-family residential	2	(9.5)	
Type of exercise*	Walking	12	(50.0)	
	Running	7	(29.2)	
	Cycling	4	(16.7)	
	Other	1	(4.2)	
Frequency of exercise (times/week)				2.9±2.1
Time of exercise (min/week)				140.5±197.4

*Multiple responses allowed.

health. The participants also explained that they used the neighborhood environment for psychological and emotional relaxation through recreation, contemplation, and walking.

3.1.1 Free access

The participants pointed out that the greatest aspect of a neighborhood environment was that it provided free access to anyone for physical activity and recreation; this no-cost access is what distinguishes such environments from private facilities. Private facilities require a fixed fee and are only accessible to people with memberships; furthermore, many people find it difficult to use indoor recreational facilities due to the cost and the inflexibility of schedules. In contrast, the neighborhood environment is open to all; thus, they can be used whenever people desire to. In addition, well-managed parks, playgrounds, etc., are equipped with various facilities such as separate bicycle or inline skate lanes and soccer or baseball fields, providing most people with the opportunity to enjoy their preferred physical activity.

"*For people like me-working as a housekeeper of a building during the day and not making enough money-it's challenging to use a private facility··· It's also not all that convenient to use community recreational facilities because their opening hours conflict with my work schedule, even if the fee of those places is relatively low. Going to exercise twice a week is already not an easy thing to do and to even pay money for it? I wouldn't do it.*"

"*I often go to a lake near my house. It's about four kilometers if I go around it. I like that place because I can exercise even at night-it's managed very well. It's a very accessible place for anyone who wants to use it. All you have to do is just go there.*"

"*There are many public parks neighborhood environments around my apartment complex. It's very advantageous to have a free and well-managed environment, because I can easily take a walk after dinner.*"

3.1.2 Places to spend time with family

Participants reported that neighborhood environments are places for families to enjoy physical activities and recreation together. In particular, families with young children tend to choose neighborhood parks for family activities such as strolling together or other group physical activities (e.g., baseball, soccer, etc). A neighborhood environment provides a space for both parents and children to walk, run, bike, and play sports. These physical activities solidify family bonds and help form a family-centered culture.

"*I think outdoor activities are the best. As my kid continues to grow, I find myself prioritizing family time. For example, indoor gyms are not appropriate for enjoying activities with my kid. I'm so happy when I can just stroll around and play soccer and baseball with him on weekends*."

One woman, whose life used to center around her career, reported that she had found a hobby°™hiking°™that she could do in her neighborhood environment, allowing her to share it with her spouse and enhance their relationship.

"*We moved to this area because we really liked mountains. It takes about two hours to climb to the top of the small mountain behind my house with my husband. I'm so glad that we both feel better and enjoy sharing a common hobby like good friends*."

3.1.3 Open areas for physical activities

Many participants commented that neighborhood environments allow them to engage in outdoor activities and enjoy the fresh air. However, activities could often be limited due to the weather or environments that are not always clean. Nevertheless, participants stated that outdoors provided them with a "freshness" that they could not experience when engaging in indoor activities. In particular, hills and riverside parks provided them with opportunities to enjoy nature and the city at night. Many participants agreed that it was enjoyable to take some time off from their busy lives to walk with their families while talking

about their day or to sit on a bench and relax, surrounded by the natural world. The availability of nature was an important factor in keeping them motivated to exercise without becoming bored.

"*I always feel very refreshed after taking a walk around the hill. I can't feel this kind of freshness in indoor facilities. I don't need any other special activities …[I've] no need to go to a sports center because I very much enjoy hiking in the fresh air...*"

"In addition to helping me maintain my good health, walking the trail on the hill behind my house on my way back from work and playing badminton both make me feel great. Once you experience that joy you want to continue to feel it. There is also a little spring on the way, and the scenery is very beautiful. It's a completely different world. I strongly believe that people should get to know this kind of joy."

"*I usually exercise at night. I can enjoy the scenery that people exercising indoors cannot see. Yesterday, it snowed and Han River was frozen... The streetlamp shined over the river... I couldn't help but stop and look at the incredibly beautiful view. This kind of joy keeps me doing outdoor exercise.*"

3.2. Barriers to Physical Activities

Participants mentioned that when they faced challenges in getting to or exercising in a neighborhood environment, they would often simply forgo the exercise altogether. Barriers that prevented participants from engaging in preferred physical activities were mostly related to accessibility and safety issues.

3.2.1 Accessibility problems

Participants stated that the biggest challenge to using a neighborhood environment was that sometimes there was limited accessibility to certain areas, such as neighborhood parks, due to their isolated locations. For example, one riverside park, which many participants preferred, was located such that people needed to cross a busy city expressway to access it. In general, the only way to cross this expressway was through an overpass or an underpass, neither of which provide easy access when using a bike or inline skates. People tend to be especially hesitant in using the underground pass, because it is dark and isolated, and thus can be unsafe.

Participants reported that good accessibility is a key factor and an essential starting point to having a positive physical activity experience. It motivates people to exercise more habitually. Some pointed out that establishing an exercise routine is difficult if it is not easy to reach their preferred neighborhood facility.

"*You have to use the passage under the city expressway and a principal road in order to reach the riverside park at Han River. It's very dangerous because there is an interchange under that overpass. I would never let my wife or my children go there alone. If I heard that my wife or my children had been there without me, even in daylight, it would make my heart drop...*"

"... A*lthough it the park] is close to my house, I have to go through an ongoing construction site, as it's a redevelopment area... I'm hesitant to go through there because the road is somewhat dark and isolated. It's dangerous to walk back and forth...*"

3.2.2 Dissatisfaction with facilities

Some participants were very much concerned that there were not enough parking spaces and rest areas, such as benches under the trees. They also mentioned that they were reluctant to use a neighborhood environment because of broken fitness equipment, lack of security, and a lack of cleanliness resulting from a lack of safety and waste management.

Furthermore, for workers who use the neighborhood environment mostly in the evening after work, it can be challenging to engage in activities where light is not evenly distributed, because the risk of accident can be quite high. Inadequate lighting was a primary factor that prevented people from using their neighborhood environment, mainly because nights were the only time for many workers and their families to exercise together on weekdays.

"There is a park near my house that I enjoy going to. It's adequately equipped and very appealing as an environment, but it's too far to walk to from my house, so I have to use a car. There is no public transportation anywhere near the park. Even if I drive, I cannot help but park my car illegally on the shoulder because there is no parking lot. These reasons make me reluctant to use the park."

"*There needs to be enough trees casting shade over a rest area so that I can avoid the strong sunshine during the day.*"

"*Garbage bins overflow because many people use them on weekends. That's why I don't usually go during weekends*."

"*I like to ride bikes. But after sunset, there's a chance I'll have an accident, because I can't see things clearly then.... Although it's very nice and relaxing to bike along the river thanks to pretty scenery, I go biking only during weekends because I don't want to go at night. Lighting is extremely important to me*."

3.2.3 Feeling unsafe

Many participants reported feeling worried about potential physical injuries during exercise, such as falling or bumping into bikers or inline skaters. They expressed particular concern about their children being injured by falling down on hard surfaces on trails or in parks. Some expressed strong concern about the danger of not having separate lanes for walkers and bikers/skaters.

"*I am very concerned about exercising with my kids in the park because the sidewalk is so hard; my kids could get injured if they fall. There are other places covered with a kind of cushy rubber flooring that would protect them from getting cuts or more severe injuries*."

"*I hate it when there are no separate bike or skate lanes. It can be very dangerous for everyone running, biking, and riding inline skates to mingle together*."

Women also tended to consider their psychological safety more seriously than did men. Several participants reported that they not only avoided the neighborhood environment at night but also during the day if they knew these environments had high crime rates, especially those that are secluded and without adequate lighting. In addition, some mentioned that they were hesitant to go to the parks that homeless people and vagrants frequented.

"*When it's too dark to exercise, I usually go home after work and do some household chores in the evening. Women cannot go outside once it gets dark. I feel uneasy and scared sometimes··· You can get into trouble if you go outside thinking that it's still bright out when it actually isn't...*"

"*Although it's a well-equipped facility in a spacious area, it can dangerous, even during the day, because nobody manages it. I heard an unfortunate story that a lady was sexually harassed when she went for a walk by herself, even though it was daylight. The park is located in an isolated area near a hill. No one should go there alone even during the day*."

3.2.4 Bureaucratic displays

Because people living in urban areas are increasingly seeking to release stress by exercising in neighborhood environments, the number of available parks has been increasing, with municipal governments attempting to meet the increasing demand and enhance the overall quality of life in their communities. Despite these efforts, several participants pointed out that some parks are established as bureaucratic displays, being built in inaccessible or relatively unsafe areas, such as roadside areas or under expressways. Such parks do not provide residents with opportunities for appropriate physical activity or relaxation. Furthermore, though designed to provide clean and safe places for residents, some parks are placed in noisy or heavily polluted locations, thus defeating their fundamental purpose. In addition, when parks are placed inappropriately, it can increase the risk of accidents. For example, one public park was difficult

to access and located at a secluded area, which leads security concerns. Some participants expressed the belief such parks are established merely because elected officials are attempting to satisfy their promises to voters, rather than considering how they will actually be used.

Moreover, for neighboring municipalities, there can be substantial discrepancies in neighborhood environment facilities, green spaces, and the degree of management depending on the capacity of the municipal government. Thus, some people feel relatively deprived if their residential areas are of lower quality compared with surrounding areas.

"*I feel that some parks weren't built based on a solid plan, because I found them placed at odd or leftover pieces of land … [Also,] heavy traffic overhead, severe noise, air pollution, and the potential risk of falling debris are problems. There are many well-built parks, and the municipal government can build more with a sufficient budget and good intentions. Otherwise, they're built as so-called bureaucratic displays to show off what the municipal government has done…*"

"*I think there is a big gap between different neighborhood environments based on their municipal governments. There are many good parks with clean atmospheres, low noise and pollution, a well-established surrounding environment, working fitness equipment, street lights, and guard posts in those newly developed areas in or around Seoul, but in my residential area in the northern part of Seoul, there are few parks, probably because it's such an old district. We live in an old part of Seoul and feel excluded from the benefits that we should be able to enjoy, like the people living in the newer areas*."

4. Discussion

The purpose of this study was to explore how people who regularly participate in physical activity perceive the various elements of their neighborhood environments as facilitators or barriers for physical activity. Many participants' comments related to how the environment allowed to them to engage in exercise to maintain or improve their health, including losing weight and maintaining physical strength.

Participants in this study were able to regularly engage in physical activities when they perceived their neighborhood environments as containing many facilitators for maintaining and enhancing physical activities. These facilitators served as positive stimuli for residents both physically and mentally. Although urban areas can often be polluted, participants reported feeling refreshed after engaging in outdoor activities compared with indoor activities. Their enjoyment of the various facilities in the neighborhood environment, the landscape and scenery around rivers or hills, and the city at night benefitted many participants psychologically, significantly promoting their physical activities and improving the quality of their overall experience. Thus, from the perspective of psychological and emotional health, neighborhood environments offer a wealth of positive experiences, including recreational activities, opportunities for quiet contemplation, and chances to solidify family bonds through physical activities (Griffin, Wilson, Wilcox, Buck, & Ainsworth, 2008).

Participants reported that an essential facilitator was the ability to use public places at no charge. In a study of African-American women, participants were less likely to use a park if they had to pay a fee, even if it was very accessible (Wilbur, Chandler, Dancy, Choi, & Plonczynski, 2002). These findings demonstrated that cost should be considered an important issue when designing recreational areas. Overall, these facilitators keep people motivated to utilize neighborhood environments and participate in physical activities. Therefore, ensuring that neighborhood environments are safe, accessible, and properly managed can enhance residents' experiences.

On the other hand, there were a number of barriers stopped people from using these environments, and hence in engaging in regular physical activity. The most frequently mentioned barrier was difficulty in access. Previous research has found that the use of urban parks and related physical activities are higher when the park is located within walking distance of

residents' homes, while requiring a car to get to such parks was a barrier (McCormack et al., 2010). Furthermore, the accessibility and condition of pedestrian roads, roadside environments, traffic flow, and the availability of bike lanes all influence people's physical activities (Humpel et al., 2002; McCormack et al., 2010).

Other barriers included dissatisfaction with facilities, feeling unsafe, and places built as bureaucratic displays. In particular, working people who can only use their neighborhood environment at night are often reluctant to do so because they feel insecure in dimly lit places. They also tend to limit their physical activities because of concerns about the risk of accidents in the dark (Lee, 2004). Because people in South Korea work long hours°™with the second highest amount of daily work hours among OECD countries in 2010 (Organization for Economic Cooperation and Development, 2010) - they tend to engage in physical activity at night. In one survey examining when people use urban parks for physical activities in South Korea, two-thirds of respondents answered that they mainly did so in the evening after work (Moon & Kim, 2009). Other studies have also pointed out that the quality of the park's condition and how well-maintained the facilities are - including the upkeep of parking and rest areas, overall cleanliness, and lighting- affect individuals' physical activity (Morris, McAuley, & Motl, 2008; Nagel, Carlson, Bosworth, & Michael, 2008; Shigematsu et al., 2009). Therefore, adequate lighting during nights is a critical to ensure that residents feel both physically and psychologically safe while engaging in physical activity.

Other physical security concerns included hard surfaces and the lack of separate bicycle lanes, which increases the risk of falls and injuries. Similar to the findings of a previous study (Adams, Harvey, & Brown, 2008), people with children were especially reluctant to use a neighborhood environment for exercise if they had problems in accessing the park or had concerns about the hard surfaces of the streets or trails, as well as the lack of separate bicycle lanes, which made them worry about injuries to their children. Therefore, a secure physical environment, with adequate lighting, appropriate location of facilities, and adequate maintenance plans are needed to encourage people to engage in physical activities.

In addition to physical security, the fear of crime was an important psychological issue affecting physical activities in all age groups (McCormack et al., 2010; Van Cauwenberg et al., 2011). Previous studies found similar results, in that seeing homeless people or vagrants in a park often stopped people from using that area for physical activity. Women, particularly, take the potential threat of harassment very seriously (Krenichyn, 2006; Kruger & Chawla, 2005). Finally, participants reported that some neighborhood environments were established for municipal governments to show off their work, regardless of public opinion. Few previous studies have described this interesting finding that such parks are simply governments showing off without consideration for how the public actually uses them (Ban et al., 2008; Son & Lee, 2005). Eventually, this kind of facility would not be used and likely fall into disrepair. Hence, the government should devote more time and effort to determining the needs of the public in order to build more user-friendly neighborhoods.

We must be cautious in our interpretations, however, as the results of this study are derived from focus group interviews of only 21 people and from the lack of younger people in the sample. Therefore, it is necessary to conduct both quantitative study and additional qualitative studies with groups that have different characteristics. Because few researchers have examined the association between neighborhood environment and residents' health in the nursing literature, further study on this subject is needed.

5. Conclusion

The results of this study indicate that people recognize their neighborhood environment as an important part of their lives, and that it actively affects their physical activity. Factors that motivate people to engage in physical activity included free access to parks, increasing accessibility to exercise areas, adequate facilities, and security. Participants were able to

experience the joys of outdoor activity and thus established exercise routines in their neighborhood environment when the various factors mentioned above were synergized. Policymaking and intervention studies should be conducted to make policymakers aware of the problems and barriers in environments, so that they can be avoided, as well as enhancing the facilitating aspects of these environments; doing so will have a critical impact on the promotion of physical and psychological health throughout the country.

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