Physical Activity; Health Promoting Community Design

Community Lenses Revealing the Role of Sociocultural Environment on Physical Activity

Ana Paula Belon, PhD; Laura M. Nieuwendyk, MSc; Helen Vallianatos, PhD; Candace I. J. Nykiforuk, PhD

Abstract

Purpose. *To identify perceptions of how sociocultural environment enabled and hindered physical activity (PA) participation.*

Design. *Community-based participatory research.*

Setting. *Two semirural and two urban communities located in Alberta, Canada.*

Participants: *Thirty-five people (74.3% females, 71.4% aged 25–64 years) across the four communities.*

Method. *PhotoVoice activities occurred over 3 months during the spring of 2009. Participants were asked to document perceived environmental attributes that might foster or inhibit PA in their community. Photographs and narratives were shared in one-on-one interviews. Line-by-line coding of the transcripts was independently conducted by two researchers using an inductive approach. Codes were arranged into themes and subthemes, which were then organized into the Analysis Grid for Environments Linked to Obesity (ANGELO) framework.*

Results. *Six main themes (accompanied by subthemes) emerged: sociocultural aesthetics, safety, social involvement, PA motivation, cultural ideas of recreation, and car culture. Representative quotes and photographs illustrate enablers and obstacles identified by participants.*

Conclusion. *This PhotoVoice study revealed how aspects of participants' sociocultural environments shaped their decisions to be physically active. Providing more PA resources is only one step in the promotion of supportive environments. Strategies should also account for the beautification and maintenance of communities, increasing feelings of safety, enhancement of social support among community members, popularization of PA, and mitigating car culture, among others. (Am J Health Promot 2016;30[3]:e92–e100.)*

Key Words: Physical Activity, Social Environment, Health Behavior, Community-Based Participatory Research, Health Promotion, Prevention Research. Manuscript format: research; Research purpose: descriptive; Study design: qualitative; Outcome measure: environmental characteristics; Setting: local community; Health focus: physical activity; Strategy: behavior change, policy, culture change, built and social environment, health promoting community design; Target population age: youth, adults, seniors; Target population circumstances: geographic location

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PURPOSE

The role that the environment plays in physical activity (PA) has been widely investigated in the last decades.[1,2] This growing literature has argued that part of increasing levels of inactivity could be attributed to the obesogenic environments that discourage PA.[2–4] Most PA studies have explored only physical environment attributes,[2] including availability of PA infrastructure, accessibility to public transport, and land-use mix. Although changes in the physical environment are fundamental for successful interventions promoting healthy behaviors, inconsistent findings on the relationship between physical environmental attributes and behaviors suggest that other factors may also play important roles.[5–7]

Ecological models of health behaviors have discussed that sociocultural environmental aspects may shape how people experience and interact with the environment, affecting their abilities to engage in PA.[1–3,8] Sociocultural environmental aspects, for instance, may explain the low prevalence of PA in areas with sufficient availability of PA infrastructure, and vice versa.[7,9]

Sociocultural environment is a complex, dynamic construct: it encompasses the community's social and cultural context that shapes beliefs, values, and practices, which, in turn, may foster or inhibit individual efforts to participate in PA.[2,3] Individual abilities to be physically active are shaped not only by tangible resources in the physical environment (e.g., presence of sports courts within walking distance or lighting in a community park), but also by intangible resources (e.g., cultural preference for a specific sport, feelings

of safety, and peer support),[1,3,9] which, in turn, influence the relationships between people and physical environment. That is, environment is made up of not only what is available in a specific space, but also the interactions among people, as well as between people and spaces.[8] These interactions shape and are shaped by the social and cultural context (i.e., sociocultural environment)[10] and therefore influence the way people interpret and behave in the environments where they live, study, work, and recreate.

Scholarly interest in the role of sociocultural environment is not new in the literature. Using different terminology (such as contextual factors[11] and collective dimension[8]), other research areas have also investigated how shared norms, values, and beliefs may be health promoting or health damaging. These studies have shown that, beyond physical or material characteristics, sociocultural features of a community or neighborhood (e.g., crime levels, sense of belonging, and participation in organizations) may affect health and well-being.[8,11] However, particular to PA behaviors, there are currently few studies that examine sociocultural aspects of the environment,[2] despite its influence being well recognized.[2,3,6,9]

Given that people's perceptions may mediate the relationship between objective assessment of environment and health behaviors,[12,13] it is essential to uncover the set of values and attitudes that enables people to be or hinders people from being physically active in their communities. Qualitative research assessing people's perceptions of the environment where their PA behaviors are enacted can be used to help gain a better understanding of the influence of the sociocultural environment on PA participation.[12,14] In fact, findings from qualitative research can provide insights into the dynamic relationships between people and spaces, which may help develop conceptual models of causal pathways that better describe how environment is shaped and shapes health behaviors.[10,11,15] In addition, revealing community members' perspectives may inform the design of multilevel interventions,[12,16,17] which should not only promote changes in the physical environment but also positively affect people's beliefs and attitudes toward PA.[14] Therefore, this study aimed to identify, using the PhotoVoice method, perceptions of the role of sociocultural environment in influencing PA engagement.

DESIGN

PhotoVoice is a community-based participatory research (CBPR) strategy that engages participants in a photography mission to gain an in-depth understanding of their perspectives on issues under analysis.[18] Its main advantage is to allow participants to document, reflect on, and verbalize their everyday experiences. It produces rich data that might not be captured through other methods[19,20] and provides insights that may better inform practice and research.[18,21] This PhotoVoice study aimed to explore residents' perceptions of factors within their environment that may influence PA participation.

SETTING

The target population was comprised of residents of four communities in the province of Alberta, Canada: (1) Town of Bonnyville; (2) Town of St. Paul; (3) community of North Central Edmonton; and (4) City of Medicine Hat and its suburb (called Town of Redcliff).

The towns of Bonnyville and St. Paul are situated in northern Alberta. At the time of data collection, these two semirural municipalities had each a population of about 5000. North Central Edmonton is constituted of 11 continuous neighborhoods in the urban core of the city of Edmonton. Situated in north-central Alberta, this community had a population of about 40,000 in 2009. Medicine Hat is an urban municipally situated in southeast Alberta. Approximately 60,000 people resided in Medicine Hat and its suburb (Town of Redcliff). Detailed information about these communities is reported elsewhere.[21]

PARTICIPANTS

Participants were recruited through local newspapers, display of posters at key community venues, and e-mail fanouts sent via local organization mailing lists. All 35 participants (74.3% females; 71.4% aged 25–64 years) signed the informed consent forms and each one received a $30 gift certificate for a local grocery store in appreciation of their time and effort.

METHOD

This PhotoVoice study was one phase of a larger CBPR project that investigated the relationship between environment and health behaviors[22] in four communities in Canada. The larger project, including the PhotoVoice study, was approved by the Health Research Ethics Board (panel B) at the University of Alberta, Canada.

Data Collection
PhotoVoice activities took place over a 3-month period during the spring of 2009. An initial one-on-one semistructured interview (60 minutes) was designed to explore the participants' understandings of their community and PA. Participants were then provided with digital cameras and asked to photograph things and places in their community (over a 2-week period) that they thought would represent opportunities and barriers to PA.

Photographs were developed by the research team and participants were given printed copies of the ones they took. In a second one-on-one semistructured interview (90 minutes), participants selected the photos they considered most significant and were encouraged to talk freely about them, sharing the meaning of each image. The PhotoVoice project is described in detail elsewhere.[21]

Analysis Strategies
The audio-recorded interviews were transcribed verbatim and entered into NVivo 10 software (QSR International Pty Ltd., Melbourne, Australia). In 2013, line-by-line coding was independently conducted by two researchers (A.P.B., L.N.), using an inductive approach. Codes were arranged into themes and subthemes, which were then classified into the four types of environment defined by the Analysis Grid for Environments Linked to

Themes and Subthemes	Opportunity	Barrier
Sociocultural aesthetics		
Trash and debris	"[The park] is fairly well maintained . . . if I find garbage in there I will carry it out, find one of the garbage cans and put it in. So I think there is a number of people that do that so it stays fairly clean." (male, adult)	"[Son's name] was on his skateboard and ran over a used condom, and then goes to pick up his skateboard . . . It's disgusting . . . what if some kid ends up with hepatitis or AIDS?" (female, adult)
Loitering, vandalism, and gangs	"This is a clean city. . . . I don't think there [are] any gangs or anything in this town." (male, adult)	"It is so congested, it is so ugly . . . I actually took a picture of the glass that people have burnt and gobbed on. There is something about this generation of children that spitting, gobbing . . . it is so disgusting that we have to stand [at the bus stop]" (female, adult)
Graffiti	"I went to take a picture of graffiti and stuff . . . I thought [the skateboard park] was a great place with them tagging and stuff, but as I was talking to this fellow I realized this is where they are doing it, it is their little place and their way to . . . express themselves there." (female, adult)	"Every building uptown pretty much has been tattooed with graffiti, like they are marking their territories. So that is obvious gangs coming in . . . gang graffiti, definitely. . . . if there is a block not marked they will mark it." (female, adult)
Safety		
Crime and drugs	—	"That park is a place where the local kids can buy drugs, that is not a happy park. . . . at night, [it] would be a dangerous place." (female, adult)
Loitering, vandalism, and gangs	"I said to my husband, 'Can you think of anything that [is] like barriers for us to be physically active in our community?' and he was like, 'Well, the bums in the park' but that doesn't stop us from taking our kids to the park." (female, adult)	"It just makes you feel not safe you know, when you see [loitering] people around." (female, senior)
Prostitution	—	"I found these 13 sex coins by the barber shop and you know when you find these things it doesn't make you feel safe in your neighborhood." (female, senior)
Unattended or stray dogs	". . . most of the off-leash dogs [in a park] are pretty good and their owners are pretty good." (female, adult)	"The only thing that is a problem [for walking] is when there [are] big dogs of questionable nature, that come racing out at you, and there is nobody around controlling them." (female, senior)
Feeling safe in general	"The more people I know and can say hello to, the safer I feel and the more willing I am to go out." (male, adult)	"My neighbor to the back of me, he put in a series of lights at his back garage. . . . I am blinded and reminded constantly at nighttime that we are under siege in our neighborhood." (female, adult)
Social involvement		
Satisfaction with the community	"I think our community does a really good job of promoting physical activity and healthy living." (female, adult)	"I think it was a good place to raise the kids. . . . for me when the kids were little, everything was right around here. . . . there [are] lots of really good resources within the town. . . . Now that the kids are older they are trapped." (female, adult)
Social events	"This is at [name's park], they had their [name's place] historic site, canoe race, hike, and bike ride. So, you know it was just a nice thing to go and spend an afternoon watching and participating." (male, adult)	—
Interactions with community	"Especially when you are working in your yard and doing stuff, people are always curious, they always want to talk to you. And so it is just a super excellent way to be active and to meet your neighbors." (female, adult)	"There are certainly people in the community who don't contribute anything really beautiful or useful, but they are not the people that are going to be on the street, they are going to get out of their expensive car and go into their small windowed houses and close the door." (male, adult)
Sociopolitical engagement	"If you have someone [who] is determined and you have a group that is organized enough to keep the ball rolling, you can have some nice facilities and some nice programs, which I am really big on." (male, adult)	"There are some places that [need] volunteers and no one wants to go, nobody has time. . . . That is why some people are not really interested in their community issues." (male, adult)
Motivation for physical activity		
Peer support	"Hockey is something that a lot of the kids are involved, and of course it also incorporates family involvement because you need parents to take kids to games." (female, adult)	"A friend and I, we were walking around the lake as well, we did a lot of walking . . . I haven't even got into that because my walking partner has moved out of town." (female, adult)
Walking the dog	"This is my dog and he is the one who keeps me walking more than I would normally walk if I didn't have my dog. So, that is a real motivator for me to get on a regular basis and walk." (female, adult)	—
Domestic chores	"I think gardening helps you emotionally as well as physically . . . because you are physically active as well as flowers and greenery and that sort of thing really produces a soothing, relaxing kind of environment." (female, adult)	—

Table, Continued

Themes and Subthemes	Opportunity	Barrier
Cultural ideas of recreation		
What people do for recreation	"... on a nice day in wintertime and some not so nice days you are going to see all kinds of people out there skiing and tobogganing, and sliding, so it is an opportunity." (female, adult)	"When people can stay home and watch 200 TV channels and watch the NHL playoffs until the end of June, and you know kids play Nintendo at home all afternoon, and then night, you don't get this sort of thing [a street hockey game] anymore." (male, adult)
Participant's hobbies	"Playing is probably the best form of physical activity and it is probably for anybody. I don't think you have to do structured workouts, I think just getting out there and playing. I love going to the park and joining in a game of tag with a bunch of kids." (male, adult)	"The computer has to be the worst thing that was ever invented. I am an adult, I should have some self-control, and like 'Oh, I missed my 6:00 check-in on my Facebook game sort of thing, with my friends.'" (female, senior)
Car culture	"Part of trying to drive less means that I try not to make any destination drives, it all has to be on one trip." (male, adult)	"Here most of the people have a car ... even the young students in the high school ... the parking lot only for students, it's full of cars. So they don't care about exercising or go walking or bike." (male, adult)

* Youth: 16–24 y; adults: 25–64 y; seniors: ≥65 y.

Obesity (ANGELO) framework.[3] Dividing the environment into two levels (macro and micro) and four types (physical, sociocultural, economic, and political), the ANGELO framework dissects the environmental attributes that may influence PA and diet.[3]

This study focused only on the sociocultural environmental aspects affecting PA discussed in the second interview. Findings exploring all types of environment defined by the ANGELO framework are presented elsewhere.[23]

RESULTS

Findings revealed six key themes in the sociocultural environment: sociocultural aesthetics, safety, social involvement, motivation for PA, cultural ideas of recreation, and car culture. The Table shows representative quotes for each subtheme. Participants identified both obstacles and facilitators to PA for most subthemes. Exceptions were "crime and drugs" and "prostitution," which were only seen as barriers, as well as "social events," "walking the dog," and "domestic chores," which were described only as PA opportunities.

Sociocultural Aesthetics

This theme encompasses environmental attributes related to the social or artistic beauty and cleanliness in the community. Dirtiness, acts of vandalism, and graffiti were mentioned as negative features contributing to the "ugliness" of the community. An illustrative quote (Figure 1A) exemplifies the participants' perceptions of litter in the streets as being a psychological barrier to outdoor PA. Acts of vandalism and graffiti were discussed as characteristics that compromise the beauty of community areas, influencing participants' decisions about where they walked and cycled (Figure 1B). However, for some participants, graffiti was a positive, appealing feature in their community, as it allowed them to be outside and appreciate artistic expressions. For others, graffiti was a creative way to engage youth in social activities, reducing their chances of loitering and adopting risky behaviors (e.g., smoking and illicit drug use).

Figure 1
Sample Photographs and Quotes for Sociocultural Aesthetics

A: Trash and debris (barrier). **"A picture of some coffee cup litter marring the view ... I got right down to take this picture because litter is a psychological barrier to me, to my enjoyment of the outdoors and being more physically active"** (male, adult). B: Loitering, vandalism, and gangs (barrier). **"As you walk along there is often wads of spit and things that are not very appealing ... this is where some of my more dubious characters ... tend to gather ... it is still a place I would prefer not to walk past"** (female, adult).

Figure 2
Sample Photographs and Quotes for Safety

A: Crime and drugs (barrier). "The busy streets are full of garbage and crime . . . I would not have done any of this walk after dark, because I would be hassled and harassed and mistaken for a hooker" (female, adult). B: Feel safe in general (opportunity). "It is a huge park right . . . I think they probably feel maybe a bit safer there because it is relatively busy and there is lots of traffic, and there is less chance . . . for bad things to happen" (female, adult).

Safety

Safety was the most prominent theme shared in the interviews; its subthemes included crime and drugs; loitering, vandalism, and gangs; prostitution; unattended or stray dogs; and feeling safe in general. Most participants described how these characteristics amplified their fears of crime or exposure to dangerous situations, constraining their engagement in outdoor PA.

Criminal activities were viewed as a deterrent to outdoor PA (Figure 2A). By showing pictures of recreation spaces, some participants explained why they and other people do not use these spaces, especially at night. Their safety concerns were related to violent events (e.g., harassment and sexual assault), burglary, and sale and use of illegal drugs that occurred in public areas in their communities.

Loitering, vandalism, and presence of gangs in the community were also seen as factors affecting safety. Prostitution on the streets was highlighted by some female participants as a safety concern and an obstacle to outdoor PA, even in the daylight. For a few participants, unattended dogs inhibit-

ed outdoor activity, threatening their safety; as a result, they avoided walking or cycling in some areas where unleashed dogs were present. Some participants shared their safety concerns without identifying a particular fear source (Figure 2B). An atmosphere of fear seemed to be spread among community members, who feel intimidated to engage in outdoor PA. In contrast, some participants reinforced their strategies (e.g., knowing their neighbors) to create a safe environment, where it would be more conducive to outdoor PA.

In all safety-related subthemes (except for loose dogs), participants mentioned the negative reputation that their community may have acquired because of some particular, uncommon episodes of incivility and disorder. According to participants, the fear associated with these events often discourages not only community members from circulating in their own community, but also prevents people from other areas from coming to the community. They also indicated that the community's bad reputation had increased social isolation and psycho-

logical distress among community members.

Social Involvement

This theme refers to the personal, social relationships developed in the community and with community members. Several participants described how (un)satisfied they were with the community in terms of PA promotion. One participant, for example, complained about the lack of opportunities for adolescents to be physically active in contrast to the great availability of PA resources for young children (Table). Some participants mentioned that social events, like festivals, jamborees, and sports competitions, positively influenced their abilities to be physically active (beyond "exercising") in their communities. Such events would represent real PA opportunities to people living in the community; no participant perceived social events as a barrier to engage in PA.

Interactions with community members seemed to play an important role either in PA participation or well-being in general. Informal social interactions included, for example, chatting with neighbors while doing gardening or shoveling (Figure 3A), making new friends in community-based PA programs, and building a network with different people who did not belong in one's social circle. Another subtheme was formal engagement in community organizations. Some participants spoke about the impact that volunteering (e.g., walking groups and neighborhood watch programs) had on expanding PA opportunities in their communities (Figure 3B). For them, these informal and formal social interactions not only strengthened community ties and sense of collectivity, but also encouraged people to get out of their homes and be active outdoors. Poor quality of social relationships among community members and a lack of volunteers in community organizations were acknowledged as having a negative influence on both community social health and individual healthy behaviors.

Motivation for PA

This theme was composed of the following subthemes: peer support, walking the dog, and domestic chores.

All subthemes emerged only as opportunities for PA engagement, except for the first. Having a friend or relative to exercise with was mentioned as a PA facilitator. Participants explained if they did not have a companion to walk, go to the gym, or do sports with, they did not feel motivated to start doing these activities or their engagement did not last long. Moreover, participants highlighted that parents played an influential role in supporting children's PA behaviors. Not only parental encouragement (e.g., motivating children to play or adopt a sport), but also parental support (e.g., providing transportation for children to get to PA venues and performing PA with them) were identified as important factors enabling PA among children.

Participants considered dog walking an important way of encouraging PA (Figure 4A). Dog ownership was viewed by participants as a primary reason that they were more active as it encouraged them to walk regularly. Positive issues were also reported when sharing pictures of tools used for gardening, house maintenance, and household chores (Figure 4B). Most participants mentioned these domestic activities as a source of free PA that had a positive impact on their physical and mental health.

Cultural Ideas of Recreation

This theme is related to the PA culture in the communities that encourages people to adopt a particular sport or activity. Participants described not only what types of PA people are engaged in their communities, but also their own hobbies. The popularity of tobogganing or skiing during the winter, as well as cycling and skateboarding in the summer, illustrated the cultural influences on PA engagement. In contrast, video game overuse among youth (Table) and the culture of gambling among seniors were perceived as deterrents to outdoor PA. Participants raised issues concerning the consequences of these sedentary behaviors, such as declining health conditions, social isolation, and poor quality of life.

Playing with children in the park and cycling were some examples of PA engagement reported by participants. In contrast, their job-related activities

Figure 3
Sample Photographs and Quotes for Social Involvement
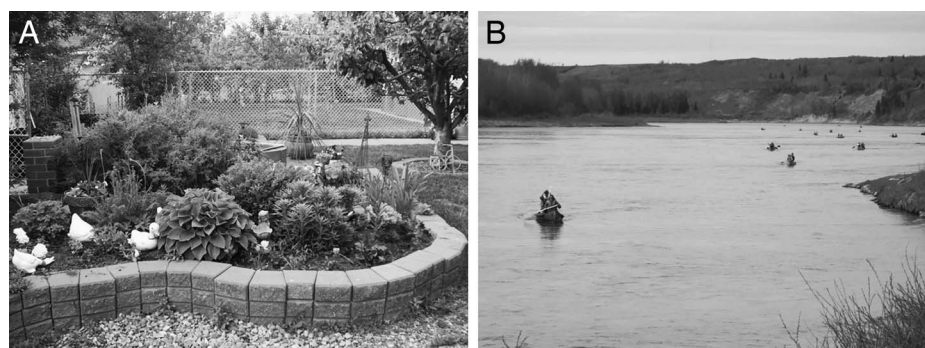
A: Interactions with the community (opportunity). "The socialization that you get, by just sitting in your backyard and looking into three or four yards down and people, you know further down will say, 'Oh hi, how are you doing?' It's a good way to socialize and again, emotionally it is very positive" (female, adult). B: Sociopolitical engagement (opportunity). "I just think that sort of thing needs to be acknowledged and encouraged, and again it is programming. It is people that take enough time to organize little things like this in the community to bring the community, I guess you know, to create some community awareness and to create some just, some recreation and activity" (male, adult).

and the culture of online social networks—which involve sitting for prolonged periods—were considered detrimental to PA (Figure 5A).

Car Culture

Some participants took pictures of automobiles to criticize increased car use. Car dependence was interpreted as being a barrier to outdoor PA given that people would drive short distances to get to places instead of going on foot or by bicycle. Participants outlined that the popularity of using cars has also impacted urban planning, influencing, for example, housing design (e.g., houses with front-facing garages) and the building of extensive road

Figure 4
Sample Photographs and Quotes for Motivation for Physical Activity

A: Walking the dog (opportunity) "... he [the dog] needs to get out and run ... he encourages me to go out, take him down to the valley" (male, adult). B: Domestic chores (opportunity). "Just the maintenance and housework that needs to be done, all the little things that have to be done around the house ... basically just physically active through yard work" (male, adult).

Figure 5

Sample Photographs and Quotes for Cultural Ideas of Recreation and Car Culture

A: Participants' hobbies (barrier). "That is just to indicate that I do a lot of sitting at my desk . . . which is not a real active, not a real active job . . . and you are sitting at a computer a lot" (female, adult). B: Car culture (barrier and opportunity). "I was thinking of it along the lines of the vehicle kind of being a hindrance to physical activity . . . I kind of balanced that one out, both a help and a hindrance to physical activity. (A) It is getting us there when we are not able to all get there together, so we can all get out and be active, but (B) it is a car . . . we are not being active while we are driving the car" (male, adult).

networks rather than focusing on creating walkable communities. However, some participants perceived automobiles to be an opportunity because they enabled participants to get to recreational areas that were not located within walking distance (Figure 5B).

CONCLUSION

This qualitative study extends the current body of literature on relationships between environment and healthy behaviors by adding visual narratives of how sociocultural environment may shape PA engagement.

Consistent with previous research,[12,20,24,25] findings on sociocultural aesthetics suggest that the creation and maintenance of pleasant areas and beautification of existent areas would be appealing. Community decay (e.g., dirtiness and buildings in poor repair) can also influence safety perception.[17]

As found in other PhotoVoice studies,[12,16,24,26,27] perception of disorder and incivilities (including vandalism and graffiti) seemed to increase the fear of crime, which, in turn, may discourage outdoor PA. The weak association between objective measures

of criminality and safety perceptions[17] suggests that environmental interventions should consider not only improving police control and surveillance of public spaces and tackling signs of incivilities but also promoting the community as a pleasing environment to live in order to increase perceived safety. This strategy may also foster the development of community networks and increase socialization, something that is particularly important given the emphasis participants placed on social involvement. In fact, community activities that foster a sense of attachment, social events that may strengthen community ties, quality of social interactions among community members, and engagement in formal and informal social networks seemed to help create a favorable environment for PA.

These findings draw attention to a dimension of the sociocultural environment (i.e., social involvement subthemes) overlooked in studies using socio-ecological models of health behaviors, especially for PA.[15] In contrast, this present study shows that social relationships among community members developed in a shared, common environment seem to influence PA engagement, particularly outdoor activities. Although this study classifies each emergent aspect of the social

involvement separately, they may be interconnected. One can hypothesize, for example, that community ties are strengthened when social events are taking place in the community and neighbors are socially and politically engaged in local organizations, leading to a sense of belonging and satisfaction with the environment where they live. These supportive social relationships, in turn, may influence the way people access and use information and resources related to PA available in the community. Therefore, the PhotoVoice findings suggest that it is necessary for community planners and decision makers to carefully consider social involvement as a factor that influences PA engagement in the community, and especially for outdoor sports, events, and activities. For example, it may be important to promote social events (e.g., dog-walking groups or play activities for children held in pocket parks) or to facilitate participation in local organizations (e.g., neighborhood watch programs) so that people sharing common interests can have more opportunities to connect with one another. This may create a supportive social atmosphere with a positive impact on real and perceived safety and peer support that may be reflected in behavior change, for example, increased local walking.

Although these particular sociocultural features of a community have been examined in the literature on health inequalities and spatial variation in health,[8,11,28] there is a lack of socio-ecological research on PA that incorporates these social involvement aspects in conceptual or statistical models.[15] Currently, most reported socio-ecological studies that have integrated aspects of the sociocultural environment have mainly investigated characteristics related to safety (from crime and unattended dogs),[9,29] social support (having a companion and role models),[2,15,29] dog walking,[17] and sociocultural aesthetics.[9,29] Future research should extend this body of work to examine if the well-known influence of the social involvement on mortality, self-rated health, and well-being[15,28] is also exerted on PA engagement. Social involvement may be an underlying, or indirect, force in the causal pathways of active living.

Motivation for PA, which is also shaped by cultural attitudes and role models,[3] is an important influence on active living. Findings from this study echo those of previous research showing the solid connection between adoption of an active lifestyle and socialization through peer support.[16,26,30,31] Given the importance of social support from family and friends, it is vital for PA interventions to incorporate the sociability component of PA. Other PA facilitators supported by previous research are dog walking[12,32] and domestic chores,[20,27,30–32] which should be encouraged as simple, convenient ways of meeting PA recommendations.

Findings also reveal sociocultural influences in preferences for sports, activities, and sedentary behaviors. According to the participants, the growing popularity of social media, TV viewing, and video games has led to a reduction in PA levels and a deterioration of face-to-face interactions and quality of life. Although a study also reported that people perceive sedentary screen time as a source of enjoyment,[31] other research identified barriers related to social norms, gender roles, and ethnicity,[20,26,27,30,33] which prevented people from using the PA resources available in the communities. These data suggest that tailored interventions (based on popular activities in each community) may be successful if the sociocultural environment where these behaviors are enacted is taken into consideration.

Another sociocultural influence was car dependence, which has been reported in other PhotoVoice research.[33] Currently, increasingly passive modes of transport are typically tackled by promoting physical changes in urban design to improve accessibility and safety for walking and cycling.[1,4] These approaches can be complemented by interventions that favor people over automobiles (e.g., walkability strategy) and promote role models for active transportation to help tackle the stigma of walking as a symbol of poverty.[20]

Some limitations should be considered when interpreting these findings. This study included four communities in Canada, which may limit the generalizability of the findings. Given the nature of the participatory methods, a variety of recruitment strategies were used to obtain a sample that might represent the diversity within the communities. However, the participants who chose to take part in this project represent a limited variation of the target population.

On the other hand, the themes were common across the four communities and were consistent with previous research,[12,16,26,31] suggesting that there are some shared sociocultural aspects across the environments that affect perceptions of PA. Moreover, recognizing local issues is indispensable to the delivery of effective policies and programs that meet people's needs.

The main strength of this study was that it provided insights into how environmental conditions interact with and shape personal views and decisions in terms of PA. By gathering the community members' perceptions, PhotoVoice produced a rich data set that may be useful to the design of tailored, effective interventions to promote PA. Indeed, some opportunities for interventions identified through this project have already been put in place by policymakers in the participating communities.[21] Importantly, this PhotoVoice study also revealed the role of sociocultural environmental aspects that have not been adequately investigated in previous PA studies.

This PhotoVoice study sheds light on the complex interactions between people's abilities to engage in PA and the environment where they live. These findings reinforce the evidence that having infrastructure available is necessary, but more importantly, a conducive community's social and cultural context for PA may also positively influence people's abilities to lead healthy lifestyles.[8,15] Consistent with ecological approaches,[1,3] findings suggest that the physical environmental attributes are just one of the multiple, interconnected levels of environmental influences on PA. A range of attitudes, beliefs, and values revealed through the community lenses in this study shows that sociocultural environmental factors play an important role in influencing people's abilities to be active.

This relationship may be particularly relevant to the literature on health behaviors, which has mainly focused on physical environmental attributes. Indeed, people's perceptions and attitudes toward PA may be a key component for effective interventions, instead of only (re)building PA infrastructure in the hope people get active. Given that the sociocultural environment is made up of practices, beliefs, and values, it is important to recognize that the extent to which and how sociocultural environment affects people's perceptions of PA may vary in different contexts and change historically.

Providing an aesthetically appealing and safe community environment that brings together people and fosters social networks should be a fundamental piece of an action agenda aimed at increasing PA in people's daily lives. In particular, improving residents' ties to and satisfaction with the community environment by promoting social events and encouraging people to take part in organized, local activities may have a positive impact on outdoor PA engagement.

In conclusion, the findings reported here suggest that providing more PA resources is only one step in the design of supportive environments; it is criti-

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SO WHAT? Implications for Health Promotion Practitioners and Researchers

What is already known on this topic?
The influence of environment in physical activity (PA) is well documented; however, few studies investigate how sociocultural environment (characterized by beliefs and practices) influence people's perceptions of PA.

What does this article add?
This PhotoVoice study revealed environmental sociocultural barriers and opportunities for PA. More importantly, findings suggest that social involvement (e.g., sociopolitical engagement and interactions with and within the community) influence people's abilities to be active.

What are the implications for health promotion practice or research?
Findings speak to the relevance of considering the sociocultural dimension of the environment when developing community-based interventions to promote PA. Although changes in the physical environment are important, promoting social interactions in safe, aesthetically appealing environments is crucial to encourage people to incorporate PA into their daily routines. Particularly, social involvement should be given special attention in future socio-ecological studies and interventions aimed to increase PA levels.

cal to (re)create values, beliefs, and practices favorable for PA to make healthy opportunities enjoyable. Future research and interventions addressing the growing levels of inactivity and environmental factors should interpret the perceived opportunities and barriers to PA in the light of the sociocultural environment.

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