

Barriers to and Suggestions for a Healthful, Active Lifestyle as Perceived by Rural and Urban Costa Rican Adolescents

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ABSTRACT

Objective: To assess the perceptions of rural and urban Costa Rican adolescents regarding which barriers and motivators affect their adoption of an active lifestyle.

Design: Data were collected in focus group discussions.

Participants: 108 male and female adolescents aged 12 to 18 from the 7th to 11th grades.

Setting: Two urban and 1 rural high school in San José, Costa Rica.

Phenomena of Interest: Active lifestyle; barriers and motivators for active life.

Analysis: Data were reviewed for emerging themes, and themes were coded using content analysis procedures.

Results: Major barriers: (a) physical education curriculum was focused on competitive sports; (b) lack of facilities in the school and community environments; (c) family did not provide good role models and reinforced the socially expected gender roles. Key motivators: (a) changed the physical education curriculum to focus on leisure and recreational activities; (b) increased the availability of facilities both in the school and in the community; and (c) provided a strong social support network.

Conclusions and Implications: The school, community, and family environments are potential targets for physical activity interventions for adolescents. Future studies should explore in depth the influence of adolescent socialization patterns (particularly for females) in the establishment of an active lifestyle.

Key Words: adolescent, physical activity, healthful, active lifestyle, health education (*J Nutr Educ Behav.* 2009;41:152-160.)

INTRODUCTION

An inactive lifestyle is considered one of the leading causes of obesity and other chronic diseases.¹ An active lifestyle, in contrast, is a broad concept that incorporates exercise, recreational activities, household and occupational activities, and active transportation.² Although establishing an active lifestyle early in life may promote improved health and quality of life in adulthood,³ several studies have shown that physical activity starts declining early in the adolescent years^{4,5}

and continues to decline throughout the life span.^{6,7} This study aims to expand knowledge of what barriers and motivators may contribute to this decline in physical activity, particularly in the adolescent years.

There is a critical need for understanding the factors related to the adoption of a healthful, active lifestyle in the adolescent population. This issue has remarkable importance in Latin America, where the adolescent population (10-19 years of age) represents a significant proportion of the general population (on average 21%),

and where very little is known about barriers and motivators to an active lifestyle. Specifically, in Costa Rica more than 50% of adolescents have been found to be at risk of inactive lifestyles, as defined by low cardiovascular fitness.⁸ The prevalence of overweight, obesity, and chronic diseases in many Latin American countries represents an unprecedented public health challenge that must be addressed from the prevention standpoint.⁹ Developing strategies to encourage an active lifestyle among adolescents may contribute to reducing the prevalence of chronic disease in these countries.

This study assessed the perceptions of rural and urban Costa Rican adolescents regarding which factors affect their adoption of a healthful, active lifestyle and explores their suggestions to encourage the adoption of such a lifestyle.

METHODS

Study Sample

The study sample included 53 male and 55 female Costa Rican adolescents

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aged 12 to 18 years and of mestizo background (mixed Spanish and indigenous people). Adolescents were recruited from 2 public high schools (1 urban and 1 rural) and 1 private high school in San José, Costa Rica. These schools were purposefully chosen to allow for the exploration of perceptions, experiences, and opinions of adolescents from various backgrounds.

Recruitment of the study population has been described previously.¹⁰ Briefly, in each school the study sample was recruited from students in the seventh to the eleventh grade. A research team member encouraged a class in each grade level to participate in the study. Consent forms were distributed in the classrooms, and students were asked to return them with parental signatures. Out of all the students ($n = 196$) who returned signed consent forms, 5 males and 5 females were randomly selected from each class. Given the study's purpose of exploring the effects of adolescent age and gender on the adoption of a healthful, active lifestyle, adolescents were divided into 4 groups: males aged 12-15 years and 16-18 years, and females aged 12-15 years and 16-18 years. The number of adolescents per group was either 8 or 9. In each school, 25-30% of the selected adolescents decided not to participate in the study at the time of initiating the focus group sessions.

The Costa Rican Institute for Research and Education on Nutrition and Health (INCIENSA) Ethics Committee granted permission for the study. Written parental consent and adolescent assent was required to participate in the study. The only compensation given to adolescents was a lecture on healthful, active lifestyle presented to each school at the end of the study. Information and educational materials about healthful, active lifestyle were provided at each of these lectures.

Focus Group Procedure

Data were collected using focus groups. The focus groups promoted discussion among the youngsters and encouraged them to explore their perceptions, experiences, and opinions about the topic. With the school

principal's permission, focus groups were conducted during school hours. Adolescents were released from class to participate in a series of 3 focus group sessions that were held with each of the adolescent age groups, as described previously. Each series was guided by a set of key questions to explore 3 areas of interest: (a) perception of, (b) barriers to, and (c) motivators for a healthful, active lifestyle. The moderators were psychologists with over 10 years of experience conducting focus groups with adolescents. To ensure consistency across all focus group sessions, a moderator's guide was developed. Co-moderators helped with tape recording, note taking, and general organization. Moderators and co-moderators were gender-matched to their focus groups.

At the start of each session, participants received a form with a simple question related to the session subject, including the reasons for their answer. Forms were used to allow each adolescent to explain his or her perceptions without feeling the potential pressure of the other participants' verbal responses, therefore preventing a bias toward social desirability. All the forms were returned to the researchers at the end of the meeting.

Moderators used flip charts to list all the answers provided by the adolescents. This method was intended to help the adolescents realize that all the answers were important and thus promote group discussion, and also to allow the moderator to see all the ideas and be able to identify and explore those that were not included on the original set of key questions.

In total, 36 focus group sessions were held; each one lasted between 45 minutes and an hour. Focus group discussions were carried out with the same group members and moderator each time, with no attrition, and were conducted on the same day, with 15-minute breaks in between. All focus groups were conducted in Spanish and tape recorded. The recording was transcribed verbatim.

The set of key questions that was used to guide the focus group sessions was developed based on a literature review of factors that might influence adolescent eating behaviors; they are presented in the Table. The key question guides were pilot-

tested on 2 groups of adolescents (9 males and 8 females in each group) with sociodemographic characteristics similar to those who would participate in the study. Questions were found to be successful and were not modified.

The first area of interest was lifestyle perception. To explore this area, each student was given a form with the following phrase: "In terms of physical activity, I think my lifestyle is . . ." with 6 multiple-choice answers: "very active," "active," "inactive," "very inactive," "sometimes active and sometimes inactive," and "sometimes very active and sometimes very inactive," followed by a space for explaining their response. After the adolescents filled out the form, the moderator asked each adolescent to state his or her response and wrote down all the responses on a flip chart. The focus group session continued, guided by a set of key questions developed by the research team to explore the subject in detail (Table).

The second area of interest was barriers to a healthful, active lifestyle. To explore this area, each youngster was given a form with the following question: "Are you able to practice some physical activity as part of your usual lifestyle? (Yes/No) Why?" Examples of physical activities included walking, riding a bike, running, jogging, dancing, pickup games, gardening, laboring in the fields, harvesting coffee, climbing the steps instead of the elevator, doing house chores, working out at the gym, doing aerobics, walking to school, and riding a bike to school, among others. After filling out the form, the moderators explored the perceived barriers to adopting a healthful, active lifestyle using the same methodology employed for the first focus group session.

The third area of interest, motivators for a healthful, active lifestyle, was explored through a third focus group session. Teenagers filled out a form with the following questions: "What could you do to motivate young people to adopt the previously discussed healthful, active lifestyle? Why?" The responses were written by the moderator on a flip chart, and afterward, the subject was discussed in greater depth following the set of key questions mentioned earlier (Table).

Table. Focus Group Guide to Assess Barriers to and Suggestions for a Healthful, Active Lifestyle among Costa Rican Adolescents**Session 1:**

1. How do you regard your lifestyle in terms of physical activity?
2. Why do you regard your lifestyle like that?
3. What do you think is best: an active or a sedentary lifestyle? Why?

Session 2:

1. Are you able to practice some form of physical activity as part of your lifestyle? (Yes/No) Why?
2. Which of these reasons is more important to you? Why?
3. Why do you think these aspects prevent adolescents from adopting a healthful, active lifestyle?
4. Who engages in physical activity more often, men or women? Why?

Session 3:

1. Which aspects would make it easier for adolescents to practice some sort of physical activity on a daily basis? Why?
2. Why do you think these ideas would motivate adolescents to adopt a healthful, active lifestyle?
3. For whom is it easier to adopt a healthful lifestyle, men or women? Why?
4. Do you think that you could motivate others to adopt a healthful, active lifestyle? Why?
5. Who else could motivate adolescents to adopt a healthful, active lifestyle? Why?

Data Analysis

The focus group tapes were transcribed verbatim. The transcription was done by an experienced secretary who was not associated with the research group. For each subject explored, data were summarized by area of residence, age, and gender. Complete transcriptions were reviewed by 3 of the authors (RM, CG, and MS), who identified emerging themes independently. Applying standard qualitative content analysis procedures, codes were assigned to each theme.¹¹

Data were examined by the authors (RM, CG, and MS) using a standard procedure of content analysis, as follows. The first relevant categories were defined through examination of the information recorded in the flip charts; later, transcribed text from the focus groups was examined to identify in which of these first relevant categories it belonged or whether it was necessary to create a new category. Finally, all categories were reviewed to determine the need to merge any of them. Each category had an average of 14 illustrative paragraphs or quotes. The quote that best described each category was selected. Since this procedure was carried out separately for each age and gender group, the categories were then compared across groups to identify similarities. The different groups generated similar thematic categories, so

all groups were merged to develop an overall list of thematic categories. Categories were prioritized based on the frequency and extent to which each theme emerged during the focus groups.

Data were coded by 3 independent coders, 2 psychologists (CG and MS) and 1 nutritionist (RM), all of whom had extensive expertise in qualitative research. The coders reached 98% agreement in their assigned codes. Inter-rater reliability, as assessed using the formula (agreement/agreement + disagreement × 100) recommended by Miles and Huberman,¹¹ was 85.7%. Throughout the analysis, the entire research team reviewed, discussed, and modified the emerging categories and their prioritization. At the end of the analysis process, an overall summary report of the major findings was prepared and reviewed by the entire research team.

RESULTS

The results are presented by examining the themes that emerged in each of the focus group sessions.

Perception of Healthful, Active Lifestyle

The urban and rural adolescents' interpretation of a "healthful, active lifestyle" was synonymous to the practice of a competitive sport or to working

out at a gym. As a specific physical activity, walking was deemed an adult activity, and in particular, something that older, sick people did to follow doctors' orders.

"... to be active you have to exercise. That's why you should go to the gym at least every other day... ." (Female in the 16- to 18-year-old group from an urban private high school)

"... Walking is just for going to school; otherwise people may think you're ill, like those ladies who have to walk because they have a condition, because the doctor told them to walk..." (Male in the 12- to 15-year-old group from an urban public high school)

For rural adolescents, a "healthful, active lifestyle" also incorporated other more leisurely activities such as household and occupational activities or active transportation—which refers to any form of human-powered transportation, such as walking or cycling to school.²

"...I think I'm active because I have to walk every day to the bus stop... walk up a hill for 40 minutes, and... it's another 40 minutes walking down ..." (Female in the 13-15-year-old group from a rural high school)

"...I think [the girls] don't exercise like us; but they do house chores, clean the floor, sweep and such, and I think that qualifies as exercise, too ..." (Male in the 16- to 18-year-old group from a rural high school)

The focus groups suggested that across gender and age groups,

adolescent respondents had a clear perception that an active lifestyle was both physically and socially beneficial. They related physical fitness to a wide scope of health advantages, such as improved circulation and flexibility, weight loss, invigoration, disease prevention, stress release, and also an opportunity to spend time with peers:

"... exercising is healthy for you and it's good for preventing illness. It's also good because you don't feel all stiff and it gives energy to your body... [y]ou get to hang out with your buddies ...[and] have a really good time ..." (Male in the 16- to 18-year-old group from an urban public high school)

Although the interpretations of a "healthful, active lifestyle" differed between rural and urban adolescents, the emergent themes of barriers and motivators for achieving an active lifestyle were similar across all adolescents.

Barriers to a Healthful, Active Lifestyle

Adolescents identified the school, community, and family environments as settings for barriers to the adoption of a healthful, active lifestyle.

School environment. Costa Rican education includes physical education as one of the disciplines within the Basic and Diversified General Education Curriculum.¹² Even though physical education is taught in private and public schools from seventh to eleventh grade in 2 consecutive 40-minute periods per week, adolescents thought that there are barriers in the school environment that prevent the adoption of a healthful, active lifestyle for the following reasons:

(a) The physical education program did not encourage the adoption of a healthful, active lifestyle.

In general, the participants in this study perceived that physical education class was uninteresting and placed too much emphasis in competitive team sports. Nevertheless, males appeared to adapt better than females to physical education classes.

"... they teach you stuff you don't even care about, like the length of the basketball court ...it's not like I'm going to be an Olympic champion ..." (Male in the

16- to 18-year-old group from an urban public high school)

"... they always make you do the same stuff: warm up, play soccer ... it's great because I love sports ..." (Male in the 16- to 18-year-old group from an urban public high school)

On the other hand, female participants mentioned that no other class options were appealing to their likes, abilities, and skills, so they preferred to be absent from physical activity classes:

"... They never teach anything I like. Besides, I'm not going to go around all sweaty afterwards, that's gross!" (Female in the 16- to 18-year-old group from an urban private high school)

"... sometimes I lie and say I have my [menstrual] period and that I don't feel well, so the teacher lets me skip [the] class ..." (Female in the 16- to 18-year-old group from an urban public high school)

(b) School hours limited the time available to engage in physical activities.

Adolescents mentioned little leisure time and lack of energy after school were barriers to physical activity.

"There's no time after school, because you're tired [...] and you don't feel like doing anything else. Whatever time is left is for resting, watching TV, listening to music, and stuff like that..." (Male in the 16- to 18-year-old group from a rural public high school)

(c) The school environment lacked suitable areas to practice physical activities.

A third barrier was lack of facilities for exercising after school. Some schools have indoor basketball or volleyball courts as well as soccer fields; however, these areas cannot be used after school hours. Importantly, only male participants stated that they took advantage of any space available to play games during recess time.

"... some schools have soccer fields and basketball courts, but there's none of that here. During recess, we play soccer in the hallway, but the principal won't let us play here ..." (Male in the 16- to 18-year-old group from a rural public high school)

"... even if the soccer field is available, you can't stay after school because they kick you right out. Only the team members who have to train for a sport can stay..." (Male in the 12- to 15-year-

old group from an urban public high school)

Community environment. Limitations in the of community's environment—specifically, lack of facilities for physical activity and the lack of a supportive environment—impeded the adoption of a healthful, active lifestyle.

"... it depends on where you live... you can't go out because there's too much traffic and it's very dangerous ..." (Female in the 12- to 15-year-old group from a rural public high school)

"... where I live there are no places to exercise. There's some kind of park, but sometimes it's scary to go out at night because you could get mugged." (Male in the 16- to 18-year-old group from an urban public high school)

Some respondents, particularly females, considered gyms as the ideal, or perhaps only, places to exercise safely.

"... there are no places to exercise in my neighborhood, either, and there is no way I'm going out to walk with the older ladies. Going to the gym is best because ...there's no risk of being mugged or anything." (Female in the 12- to 15-year-old group from an urban private high school)

Similarly, rural adolescents thought that the city was more convenient for the adoption of a healthful, active lifestyle, contextualizing it on the availability of gyms in urban areas.

"... if there were a gym where I live, then it'd be different because you'd feel more compelled to go.... In the city where there are gyms and where everything is closer, it's easier to exercise." (Female in the 16- to 18-year-old group from a rural public high school)

However, particularly among urban female respondents, the question of space and built environment created a discussion about the difficulties to attend the gym.

"... but you can't go all the time because you have to study for tests or do homework or because you have to pay the monthly fee and your parents can't be giving you money for everything. . ." (Female in the 16- to 18-year-old group from an urban private high school)

Family environment. Adolescents expressed that there are several barriers within the family environment,

such as a lack of role models to increase physical activity and the reinforcement of socially expected gender roles, which prevent the adoption of a healthful, active lifestyle.

(a) The family failed to provide role models to follow for the adoption of a healthful lifestyle.

According to the adolescents' perception, parents provided neither a positive, active lifestyle model nor the emotional support required to encourage them to engage in some sort of physical activity. Parents and adults in general were also seen as perpetuating sedentary behaviors.

"... We all sit and watch TV, and she (mom) says, 'We have to start exercising, tomorrow, tomorrow, tomorrow,' she says, tomorrow, and we never do anything ..." (Female in the 12- to 15-year-old group from an urban public high school)

(b) The masculine and feminine roles reinforced by society create a wide gender gap for the adoption of a healthful, active lifestyle.

According to the focus groups, the social representation of what it means to be a man and what it means to be a woman was strongly influenced by the social and historical context and affected the assignment of social roles in adolescents. It seems that the family environment demanded and reinforced socially expected masculine and feminine behaviors, including physical activity patterns for men and women. This was more noticeable in rural areas.

"... on weekends, men are already exercising a lot while they are working in the fields, and they can go and play pickup games whenever they please. But females, we have more chores to do around the house, and afterwards we don't feel like going out ..." (Female in the 16- to 18-year-old group from a rural public high school)

An emergent theme among both male and female adolescents was the perception that men are more active because their parents encourage them to play sports from early childhood. Also, female adolescents perceived men as less concerned with their appearance ("... they don't mind being sweaty, stinky, sticky, or if their shirts are all wet with sweat ...") and offered this as an explanation of why men were more likely to participate in physical education classes

and recreational activities during recess.

"... Since they're babies, they're taught to play sports, even on a weedy field. Meanwhile, little girls play with Barbie dolls or something like that . . ." (Female in the 16- to 18-year-old group from an urban private high school)

In contrast, male respondents viewed females as sedentary, which agrees with the females' self-perception.

"... They (females) go on a diet and do crunches to get skinny here [the abdominal area], then [after] they're okay and they continue to do nothing ..." (Male in the 12- to 15-year-old group from an urban public high school)

"... females there are too delicate, they won't even move. If they get sweaty, they say it's gross ..." (Male in the 16- to 18-year-old group from an urban public high school)

According to the male adolescent respondents, females do some form of physical activity or exercise only "... when they feel fat or their clothes don't fit..." They perceived that most females would rather stop eating than do physical activity to lose weight because "... they don't care about improving their physical fitness; all they want is definition, curviness, and a smaller tummy."

Motivators for a Healthful, Active Lifestyle

During the discussions, adolescents also identified motivators that may facilitate the adoption of a healthful, active lifestyle.

(a) Change to the physical education curriculum

The adolescents recommended a change to the physical education curriculum, to focus on leisure and recreational activities instead of competitive sports. They hoped that this change would motivate adolescents, particularly females, to become more physically active.

"... during physical education, they should also do things that the girls enjoy, that motivate them so that they can feel happy about it, like we do when we participate in pickup games and have fun with the guys." (Male in the 16- to 18-year-old group from an urban private high school)

(b) Increase the availability and access to places designed for physical activity

The participants indicated the need to increase the availability of facilities and places suitable for practicing physical activity, both in the school and in the community.

"... in every neighborhood there should be a center, a multisport type of complex where you can do everything . . . and with good security so that people can feel safe ..." (Male in the 16- to 18-year-old group from an urban public high school)

(c) Have a strong social support network

The study participants felt that both parents and teachers needed to become better role models. According to the adolescents' perception, parents and teachers constitute a social network that can support the adoption of a healthful, active lifestyle.

"... Doing things on your own is not fun, but if someone tells you, 'Come on, dude, let's go play!' then you go. It's the same when you're in school and the teachers encourage you. But at home, it's depressing with my mom always watching soaps and my dad watching the game." (Male in the 16- to 18-year-old group from an urban public high school)

"... My mom says, 'Leave that (exercise) for tomorrow, come with me to run some errands,' instead of saying to me, 'Let's go do some exercise together, and let's leave the errand for tomorrow ...'" (Female in the 12- to 15-year-old group from an urban public high school)

(d) Inform that physical activity improves body image

Adolescent males indicated that promoting an active lifestyle as an element to improve body image could be a useful motivator to encourage females to become more active.

"... if you want them [the females] to do something, tell them that if they want to stay in shape, it is important that they exercise. What matters to them is looking good, not being healthy." (Male in the 12- to 15-year-old group from an urban public high school)

Females did not offer any specific recommendations to increase male physical activity, because they already perceive males as being active.

"... They can play pickup games at any time ... that's why most of them are fit, even though they eat like horses!"

(Female in the 16- to 18-year-old group from an urban public high school)

The findings of this study provide new information about the importance of the social, physical, and cultural environments, as well as the behavior-specific cognitions, as barriers or motivators for adopting a healthful, active lifestyle during adolescence.

DISCUSSION

This study aimed to assess adolescents' perception of barriers and motivators for adopting a healthful, active lifestyle. To the authors' knowledge, this is the first study of its kind to focus on Latin American, and specifically Costa Rican, adolescents. Understanding adolescents' barriers or motivators for the adoption of a healthful, active lifestyle may help develop strategies to encourage physical activity in the early adult years and perhaps into adulthood.

Results from focus groups of rural and urban Costa Rican adolescents revealed that the school, community, and family environments were perceived as the main setting where several barriers prevent the adoption of an active lifestyle. Although these barriers have already been identified in previous, similar adolescent studies from Europe, the United States, Australia, and Canada,¹³⁻¹⁷ the interpretation of these barriers is very different in Costa Rica, and perhaps also in other developing countries. For instance, Loucaides et al have reported that traveling to school is associated with physical activity for urban Canadian adolescents, but not for rural ones, because they live farther away from school and have to be transported by bus.¹⁸ In contrast, in Costa Rica, most rural adolescents walk to school or walk long distances to take the bus every day,¹⁹ as is reflected in their own perception of their lifestyle, which they deem very active because of their daily walks to and from school. Meanwhile, urban adolescents perceived that the availability of facilities (such as soccer fields and gyms) is an important factor for becoming active. Similar results may be seen in other Latin American countries, where rural resi-

dents engage in more walking and nonleisure physical activity than urban residents.²⁰ In these cases, persuading adolescents—particularly girls—to walk to school can be an effective way of increasing physical activity, especially for those adolescents who have limited access to facilities in their neighborhoods.

Schools have been identified as a supportive environment for the promotion of an active lifestyle since early childhood.^{21,22} According to Ferreira et al,²³ schools offer many opportunities for adolescents to engage in physical activities, such as physical education classes, recess periods, extracurricular sports, and personnel with sufficient training and commitment to define and deliver physical activity programs and policies. These results, however, reveal that the Costa Rican school environment is not conducive to increased physical activity because of its physical education curriculum. Because of the current Ministry of Education guidelines, the curriculum is strongly focused on teaching the foundations, techniques, tactics, physical skills, and practice of team or individual sports. The authors consider that the physical education curriculum should be revised and thereby enable schools to expand their role in promoting a healthful, active lifestyle in adolescents.

The practice of sports has been consistently associated with positive health behaviors,²⁴⁻²⁶ but only those adolescents with the required skills and abilities can become members of an athletic program. Hence, many adolescents who do not participate in an athletic program, but would like to enjoy a healthful, active lifestyle in other ways are excluded. Currently, the curriculum appears to reinforce the idea that being active can happen only through the practice of a competitive team sport. This idea is troubling because, according to the results of this study, male adolescents tend to practice specific competitive sports outside of the school environment as long as they can meet other peers. This type of behavior may be carried on to adulthood, and physical activity may decrease if these adolescents and then adults engage in healthful, active lifestyles only as long as it is paralleled with playing a competitive sport, and not otherwise.

Similarly, the school environment poses some barriers to the adoption of a healthful, active lifestyle for girls. The current physical education policies underplay the concept of physical activity as an element of daily life and define it as another curriculum item that is subject to a passing grade. According to the results of this study, from this perspective, girls are less likely to adopt an active lifestyle unless there is a motivating factor (such as weight loss) or a compelling factor (such as a doctor's orders). In addition, physical activity among females, especially among adolescent girls, is also more likely to be determined by the social support from friends and significant others.²⁷⁻²⁹ The literature is consistent regarding patterns of physical activity in females versus males; it appears that females require more positive support, modeling, and norms from parents to be active.^{17,30-32} Adolescents who experience social support from parents, for example, have shown higher levels of physical activity.^{17,33,34} In this study, the Costa Rican family environment perpetuated overweight and sedentary behaviors instead of promoting active lifestyles and therefore posed barriers to becoming more active.

According to Social Cognitive Theory (SCT), social support emerges as a strong predictor of the adoption of a healthful, active lifestyle because of its influence on psychosocial variables such as self-efficacy and self-regulation.³⁵ Anderson et al recently pointed out that self-regulation exerts the strongest effect on physical activity and that the family's social support is the stronger predictor of self-regulation.³⁶ Therefore, the promotion of a healthful, active lifestyle should perhaps focus on increasing self-regulatory behaviors such as planning, scheduling, and incorporating physical activity into the adolescent's daily routine. Likewise, to encourage active living among adolescents, the behavioral norms and modeling of family members and peers should be considered. Family and peers are at the core of the adolescent's social environment and influence the definition of lifestyle by mediating the social construction of gender (masculinity or femininity) and by establishing and modeling diverse conducts.

It is important to highlight the role of family and peer norms regarding

the social construction of masculinity and femininity. Adolescents seem to feel pressured or limited by the socially expected masculine or feminine behaviors when trying to adopt an active lifestyle. According to SCT, the adoption of a healthful, active lifestyle is a result of the influence of different social actors (parents, peers, teachers, and significant others) on its construction, maintenance, and questioning.³⁵ The results of this study suggest that for adolescent males, participation in physical activities is associated with social masculinity construction. Masculinity is developed and confirmed by overcoming the risk and fears associated with sports participation.³⁷ On the other hand, the focus groups suggest that physical activity in females is associated with self-image; females become more physically active in response to the social demands on the construction of femininity. The demands of society regarding how a female is supposed to behave and look are significantly important in the configuration of gender identity for female teens.³⁸

In trying to increase physical activity among Costa Rican females, it would therefore be helpful to develop motivators that allow adolescent females to review how they have constituted their femininity and how to refocus it to integrate the practice of physical activity as a recreational and leisure element, that is, a part of their lifestyle and not necessarily as the result of social demands. Educational programs that teach healthful lifestyles could help female adolescents to identify, adopt, and incorporate healthful physical practices as a new social norm. In that way, the peer network could provide support for active living. Recent studies show that peers have a significant direct effect on female adolescents' physical activity and an indirect influence through perceived self-efficacy.^{13,23,27-32}

In line with previous studies,¹³⁻¹⁸ the lack of access to facilities for physical activity was perceived by adolescents as a particularly important barrier to the adoption of a healthful, active lifestyle. Evidence from transportation and urban planning studies suggests that people living in neighborhoods with greater population densities, land-use mix, street connec-

tivity, and walking and biking infrastructure tend to be more active, because these environments provide physical activity opportunities that are accessible, convenient, safe, and appealing.³⁹⁻⁴³ Recently, Sallis and Glanz suggested that designing and outfitting parks to provide diverse opportunities for popular physical activities and ensuring equitable distribution of recreational facilities could contribute to an increase in activity among youth of all ages.⁴⁴ In Costa Rica, however, most urban and rural communities have a poorly developed walking and biking infrastructure, that is, lack of sidewalks, long walking distances to school, and the need to walk across busy streets with fast-moving traffic. This poor public infrastructure appears to be an important barrier to creating activity-friendly communities. Nevertheless, there are some feasible options to increase the availability of spaces for the practice of physical activity in Costa Rican communities; but adolescents frequently complained that access to community soccer fields is generally restricted, since they are used almost exclusively for local and district teams and their games and tournaments.

Community public spaces need to be opened up to the public, and the sports and recreation community committees could adopt policies that serve as many people as possible and provide all the members of the community with adequate health-related physical activities. In addition, the possibility of schools opening up their facilities for public use should be considered. Loucaides et al have indicated that this possibility is especially important in locations where community facilities or outdoor space recreation are limited.¹⁸ Certainly, these proposals require a strong commitment from community organizations and local governments to safeguard the integrity of the school infrastructure.

It is important to note that although some studies have shown the benefits of supportive settings (eg, neighborhoods and schools) and the positive impact of having access to facilities (physical places designed for physical activity) on adolescents' physical activity patterns,^{21,34} there is not enough empirical evidence to

confirm the association between built environments and adolescent physical activity.^{17,23,28} Access to a supportive environment may be necessary but not sufficient to encourage adolescents to become or remain active. Research suggests that psychosocial factors such as social support, self-efficacy, and self-regulation may be more effective in adopting an active lifestyle.^{13-15,27,28,45} Previous reports by Monge-Rojas et al indicated that self-efficacy is a significant predictor of behaviors associated with physical activity among Costa Rican adolescents.⁴⁶

The results from this study contribute importantly to the literature about factors influencing physical activity in adolescents in the context of a developing country such as Costa Rica. However, some limitations were noted. First, the sample included only adolescents enrolled in school; therefore, youngsters not participating in the educational system for social or economic reasons were excluded. Second, the study is solely based on the adolescents' opinions and did not take into consideration the perception of the groups of adults who interact with them and who represent an important secondary group to involve in the design of interventions for promoting healthful adolescent development.⁴⁷ Third, the results obtained cannot be generalized beyond the group of participants included in the study. However, this study does provide an initial approach to identifying Costa Rican adolescents' barriers and motivators for adopting a healthful, active lifestyle and offers important insights that could be further explored in policy interventions.

IMPLICATIONS FOR RESEARCH AND PRACTICE

Findings from this study may be used to design public health prevention programs targeting adolescents living in countries like Costa Rica. Nevertheless, further research is needed to explore the factors that affect the establishment of healthful, active lifestyles in males and females and to ensure that public health interventions address concerns and needs relevant to adolescents. Future studies

should explore how the adolescents' socialization patterns—particularly among females—influence the establishment of a healthful, active lifestyle in such a way that public health interventions can be designed with a gender approach. Aspects such as parents' social construction of masculinity and femininity, family social support, availability and access to physical places designed for physical activity in community settings, and school physical education policies must be considered. In addition, future studies should take the discussion to parents, teachers, and other adults who interact with adolescents, because they constitute an important group to involve in interventions targeted at promoting a healthful, active lifestyle in different groups of adolescents.

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