Chapter 9
Leisure Time, Physical Activity, and Health

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Introduction

A great deal of evidence supports the many benefits of regular physical activity (PA). Although recent developments have shown the growing importance of genetics on several diseases such as obesity (Maes, Neale, & Eaves, 1997), low levels of PA increase the risk of several chronic diseases and premature mortality (Paffenbarger & Hyde, 1984). Rather, adequate levels of PA include several benefits such as improvements in cardiorespiratory fitness, muscular fitness, bone health, body composition, and cardiovascular as well as metabolic health biomarkers (USDHHS, 2008; WHO, 2010). Therefore, physical inactivity has been categorized as a modifiable risk factor for lifestyle-related diseases with long-term benefits in psychological, physiological, and social domains of human life regardless of the age group (Andersen et al., 2006). For instance, a recent study highlighted that living a physically active lifestyle is associated with a 40% reduction in the genetic predisposition to common obesity (Li et al., 2010), whereas genetic influences on the body mass index (BMI) are lower among those who report vigorous exercise (McCaffery, Papandonatos, Lyons, & Wing, 2009). Similarly, structured exercise training that consists of aerobic exercise, resistance training, or both was associated with HbA1c reduction in patients with type 2 diabetes (Umpierre et al., 2011). Thus, increasing PA is a medical recommendation and a public health policy objective (WHO, 2002). However, PA as part of daily life appears to have declined over years among youth (Strong et al., 2005) and

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during adulthood**.** Hence, youth has been seen as a critical period of intervention and analyses (Trost et al., 2002) because it is believed that adolescents who develop a habit of participating in activities that can be carried over adolescence into adulthood will be more likely to remain active (Vanreusel et al., 1997). For example, patterns of PA as well as sedentary living appear to play an important role in long-term weight regulation (Lowry, Wechsler, Galuska, Fulton, & Kann, 2002). Therefore, it is important to identify the factors related to lack or low levels of PA at the population level looking at preventive strategies across one's life span.

Physical activity policies across the Western countries look toward the participation in sports and exercise activities as an important part of leisure time. Leisure time is the period of recreational and discretionary time, which not only appears to be a critical period that defines the youth propensity for PA (Telama, Nupponen, & Piéron, 2005), but it is also important in adult population PA participation. However, media and other opportunities that lead acquiring knowledge and learning and experiencing new things outside of school and work emphasize the importance of leisure. Indeed, hobbies and other leisure-time activities like music, drama, arts, and dance have come to constitute very important spheres of living and learning, emphasizing the importance of leisure in adolescent life (Aittola, 1998) and among adults**.** Thus, sedentary activities such as TV viewing, reading, working at a computer, or talking with friends on the phone while sitting (Pate, O'Neill, & Lobelo, 2008) have all been incorporated into the delivery of education and leisure (Kerner, Kurrant, & Kalinski, 2004). Moreover, while these activities emerged as an important characteristic of today's lifestyle, they simultaneously represented a major source of inactivity that is carried on from childhood to adolescence and adulthood (Must & Tybor, 2005). Therefore, it is worthy to consider the interrelationships between different leisure-time activities, especially in youth, as they contribute to understanding how and in what context and with whom individuals spend their leisure time and how this might be related to PA involvement.

An important issue is that not all leisure-time activities have the same impact in terms of health benefits. Contemporary daily life is replete with a potential harmful effect in developed societies' quality of life and health outcomes due to the absence of PA. Adolescents have a large component of unstructured free time (40%), and they face several attractive activities other than sports and/or PA. Thus, a sedentary lifestyle and a sedentary-promoting environment are features of our daily lives that contribute to prolonged sitting (Hamilton, Hamilton, & Zderic, 2007) and a lack of movement. Some research suggests that some leisure-time activities such as TV viewing and video games may encourage obesity both by displacing time that might be spent being physically active and exposing viewers to advertisements that encourage individuals and specifically children to eat high-calorie, low-nutrition foods (Henry & Kaiser Family Foundation, 2004). Additionally, some evidences suggest that increased amounts of time are devoted to sedentary behaviors (e.g., watching TV) and that this competes with PA during adolescents' leisure time (Koplan, Liverman, & Kraak, 2005).

From a public health perspective, PA is defined as any bodily movement produced by skeletal muscles that results in energy expenditure (Caspersen, Powell, & Christenson, 1985). Physical activity in daily life is comprised of different domains

(e.g., work, domestic, leisure) (Craig et al., 2003) or types (organized and non-organized physical activity) (Telama et al., 2005) and settings (e.g., home, playgrounds, schools) (Stratton & Leonard, 2002; Zask, van Beurden, Barnett, Brooks, & Dietrich, 2001). Despite these features that show the complexity of interpretation of PA, leisure-time physical activity (LTPA) has been seen as one of the most important dimensions of overall physical activity. For instance, it was shown that the time after school hours accounted for the highest levels of PA participation (Mota, Santos, Guerra, Ribeiro, & Duarte, 2003; Trost, Pate, Freedson, Sallis, & Taylor, 2000). Likewise, a review of 127 intervention studies (Dishman & Buckworth, 1996) showed that increasing LTPA was the goal with the highest effect size (0.85) in order to promote PA. In two recent studies, we have shown that outside of school PA was a key point for girls' moderate-to-vigorous physical activity (MVPA) engagement (Mota, Silva et al., 2008). Further, our own data suggests a gender-specific LTPA-obesity relationship. In fact, we found in boys but not in girls that BMI was lowered as the participation in PA outside the school increased (Mota, Ribeiro, Carvalho, Santos, & Martins, 2010). Additionally, involvement in community sports programs has been found to account for 55–65% of children's MVPA (Katzmarzyk & Malina, 1998). However, it is well documented that gender is an important determinant in PA participation (Sallis, Prochaska, & Taylor, 2000) and that there is a decline over the years (van Mechelen, Twisk, Post, Snel, & Kemper, 2000).

Despite the fact that gender differences in PA and sport participation have diminished over the past few decades (Telama, Naul, Nupponen, Rychtecky, & Voulle, 2002), differences and values associated with lifestyles continue to exist between boys and girls (Vilhjalmsson & Kristjansdottir, 2003). A long research tradition established gender differences (Vilhjalmsson & Thorlindsson, 1998) that may carry forward to adolescents' choices about how they spend time out of school. The key point in long-term achievements and lifestyle promotion is to establish how youngsters and adults can be influenced toward establishing regular PA as a habit, for example, understanding the factors that influence exercise adoption affecting PA behaviors in the long term (Epstein & Roemmich, 2001). For instance, the movement out of high school is characterized by many life transitions that may influence health behaviors. As a matter of fact, from childhood to adolescence and from adolescence to adulthood, there are several life adaptations, not only from a biological point of view but also from a psychological and social standpoint (Aaron, Storti, Robertson, Kriska, & LaPorte, 2002).

Within this chapter, the authors will make an overview about the relationship between PA patterns during leisure and the contribution it makes to health. First, we will analyze the health-related physical activity through the individuals' choices made during leisure and determine how these active choices might be helpful for health and how they can be affected by several factors such as gender, socioeconomic status (SES), and PA type and intensity. Then, we will analyze how cultural and environmental (context) determinants may act to enhance or diminish the PA opportunities over years. Finally, we will look to the future to discuss about the PA as a behavioral choice based on educational factors and the importance of school and school physical education as a key feature of leisure education.

Correlates of Leisure-Time Physical Activity (LTPA)

Leisure-time physical activity is considered the PA that is carried outside of the time of work (school) and essential domestic activity. From a public health point of view, it is important to transform these periods (after school hours) as an opportunity to engage youth in PA behaviors as well as to direct and design motivating, socially stimulating, and enjoyable PA programs. Children develop their preferences and decide to engage or avoid participating in PA depending on the extent to which the characteristics of activity are appealing to them (Chen & Zhu, 2005). Therefore, creating positive experiences and opportunities for activity might be critical for participation in PA during leisure time.

Some PA characteristics such as type of PA undertaken (organized [OPA] vs. non-organized [NOPA]) might be associated with different correlates (Giles-Corti, Timperio, Bull, & Pikora, 2005). One important gap in this field is the study of behavioral context, which relates to the setting in which the behavior takes place (Giles-Corti et al.), for example, depending on location, psychosocial and environmental correlates explained between 15 and 55% of the variance in PA (Ommundsen, Klasson-Heggebo, & Anderssen, 2006). Participation in NOPA and OPA is also an important issue since both types of participation predicts PA in adulthood (Telama, Nupponen, Piéron, 2005 & Yang, Telama, Laakso, Viikari, 2003). Some studies showed that OPA was more important among the more active groups in both boys and girls (Mota & Esculcas, 2002), with others suggesting that overweight and obese adolescents were less likely to take part in OPA than those of normal weight, though there were no differences in participation in NOPA (Santos, Oliveira, Ribeiro, & Mota, 2009). Additionally, OPA tends to persist into adulthood among some European (Telama & Yang, 2000; van Mechelen et al., 2000) and American (Aaron et al., 2002) adolescents. However, NOPA choices seem to be related to low PA intensity (Mota & Esculcas) and to lower socioeconomic levels (Raudsepp, 2006; Santos, Esculcas, & Mota, 2004).

The current PA guidelines recommend 1 h or more of daily physical activity for youth and 30 min for adults as well as the elderly. Most of the time should be spent in either moderate- or vigorous-intensity aerobic activities and should also include muscle- and bone-strengthening activities. PA intensity is an issue that should be addressed, since daily PA might be accrued through organized activities (Mota et al., 2010). Indeed, longitudinal studies showed that the decline in physical activity participation is greater in high-intensity activities and in NOPA activities (Telama & Yang, 2000). Additionally, some reports suggested that formal activities (organized) lead to a more physically active youth, while unstructured activities are likely to be more related to obesity (Santos et al., 2004). Also, early-life participation in sports and other types of PA is linked to continued participation in those specific activities during late adolescence (Pate, Ward, O'Neill, & Dowda, 2007).

An additional and valuable contribution of PA during leisure time is associated with its role as a social activity. More active boys and girls were more involved in those activities (socializing activities) during their leisure time (Mota et al., 2008). This is a very interesting finding because it is well-known that leisure-time activities

provide enriching opportunities for children to interact with peers (Telama et al., 2005). These findings agree with data suggesting that more active boys were more likely to have more active friends (Sallis, Alcaraz, McKenzie, & Hovell, 1999). Thus, LTPA might also provide an opportunity to develop social interaction with peers whom have been reported as the most important socialization agents during adolescence (Anderssen & Wold, 1992). It might be possible that those involved in more social activities would receive direct encouragement to engage in physical activities through their peer interactions, which in turn might support a higher level of physical activity (Mota, Santos, & Ribeiro, 2008).

In regard to leisure activities and/or choices, PA is influenced by different factors such as socioeconomic status (Owen, Humpel, Leslie, Bauman, & Sallis, 2004). Indeed, SES is an important determinant of health and well-being, because it influences people's attitudes, experiences, and exposure to several health risk factors (Huurre et al., 2003). Additionally, several studies have shown that low-socioeconomic characteristics and exposures during childhood are related to a variety of chronic diseases and all-cause mortality in adults (Cohen et al., 2010). For example, the number of physically active persons increases according to the level of family SES (Sallis, Zakarian, Hovell, & Hofstetter, 1996). Successful persons with higher education respond best to advice and recommendations for a healthy lifestyle. Although some studies showed that there was weak influence of parental SES on the adolescents' physical activity (Trost et al., 2003), a higher income and higher educational level coincide with more explicit ideas about how useful PA is during leisure time (Zinnecker, 1995). Usually high occupation level is associated with higher incomes, which in turn has been shown to coincide with positive attitudes toward physical activity during leisure time (Bois, Sarrazin, Brustad, Trouilloud, & Cury, 2005) and higher physical activity levels (Gordon-Larsen, McMurray, & Popkin, 2000; Mota, Gomes, Almeida, Ribeiro, & Santos, 2007). A recent review showed that 58% of the studies included on that report pointed out that adolescents with a higher SES are more physically active than those with a lower SES (Stalsberg & Pedersen, 2010). Adolescents from low-income families have limited access to those resources that can support physical activity, such as access to formal leisure physical activity clubs (Kantomaa, Tammelin, Näyhä, & Taanila, 2007; Sallis et al., 1996). The parent's occupation is associated with PA during leisure and may be related to either encouragement of activity (Vilhjalmsson & Thorlindsson, 1998) or providing transportation to facilities such as sports clubs (Hoefer, McKenzie, Sallis, Marshall, & Conway, 2001) or even providing financial support for equipment (Raudsepp, 2006). In this case, it is also possible that a different parent-gender role mediates the relationship between SES and LTPA (Davison, Cutting, & Birch, 2003). Usually, the mothers played a more instrumental role in their children's recreational activities than the fathers (Aaron et al., 1993). Furthermore, they are more prone and more involved in adolescents' LTPA (Mota, Gomes, Almeida, Ribeiro, & Santos). Thus, given the relationship between levels of PA and some health outcomes such as obesity, this association might be stronger in groups with lower education levels as well as in girls (Drenowatz et al., 2010; Sturm, 2008). Therefore, those findings are of particular importance for strategies and interventions tailoring lower SES background communities and/or girls.

Nonetheless, the time spent in inactive pursuits may be just as important as time spent in PA (Biddle, Gorely, Marshall, Murdey, & Cameron, 2004). Therefore, it is worthy to consider the interrelationships between different leisure-time activities in youth, as it contributes to understanding how and in what context and with whom young people spend their leisure time, and how this might be related to PA involvement as well as some health outcomes. For instance, it was suggested that TV viewing and video games may encourage obesity both by displacing time that might be spent in physical activity and through exposure to advertisements that encourage children to eat high-calorie, low-nutrition foods (Henry & Kaiser Family Foundation, 2004). Moreover, the independent effect of different media-based screen time use, such as video games, computer use, or TV watching, has also been suggested. For example, TV viewing, but not computer use, was a significant predictor of engagement in PA during leisure (Mota, Gomes, Almeida, Ribeiro, Santos, 2007). In another study, Strauss, Rodzilsky, Burack, and Colin (2001) reported that TV and computer activities might independently correlate with moderate activity levels. Indeed, it seems that adolescents can be interested in playing with a computer as well as being active in sports. The time spent working on the computer, but not the time on computer for recreational purposes (Feldman, Barnett, Shrier, Rossignol, & Abenhaim, 2003) or general computer use, (Santos, Gomes, & Mota, 2005) was positively associated with PA. A possible implication from some of those outcomes is that TV viewing leads to a more sustainable lack of PA. This reinforces the suggestions that different sedentary behaviors, such as computer use or TV viewing, are important in their own right, and stresses the idea that active adolescents might be more prone to better manage their leisure time (Feldman et al.).

Leisure-Time Physical Activity and the Built Environment

There is a growing recognition that the environment influences health behavior. An environment that encourages excess energy intake and reduced energy expenditure is widely considered to be a driving force behind population-wide weight gain (Dannenberg, Burton, & Jackson, 2004). As a matter of fact, built environments that facilitate more active lifestyles and reduce barriers to PA are desirable. Indeed, one important aspect of the environment's role is the way in which environments, neighborhoods, and communities are designed to promote or discourage the opportunity to be active (Handy, Boarnet, Ewing, & Killingsworth, 2002). For example, the availability of outdoor play spaces such as parks and playgrounds may be especially important because the time spent outdoors is strongly correlated with PA (Tudor-Locke, Ainsworth, & Popkin, 2001). Recent studies showed some significant associations between obesity and environmental characteristics (Timperio, Salmon, Telford, & Crawford, 2005) as well as between environment and youth's PA (Duncan, Spence, & Mummery, 2005; Timperio et al., 2006). Our own data showed that girls who perceived a better environment aesthetics neighborhood (OR 1.59) were more likely to be active during leisure time, while girls who reported more concerns with a lack of personal safety were more likely to be non-active

(Mota et al., 2007). Other studies suggested that adolescent girls were less active outdoors when they lived in high-crime neighborhoods (Gomez, Johnson, Selva, & Sallis, 2004; Gordon-Larsen et al., 2000). Among urban students, it was shown that children living in a safe neighborhood were physically active for extra 49 min longer than those living in an unsafe neighborhood (Molnar, Gortmaker, Bull, & Buka, 2004). Furthermore, a recent study determined that children who rarely played outside due to safety concerns were at higher risk for obesity (Lumeng, Appugliese, Cabral, Bradley, & Zuckerman, 2006). Thus, safety may be an important determinant of children's and adolescents' behavior (Timperio, Crawford, Telford, & Salmon, 2004) especially for girls. Improving roads and pedestrian features in neighborhoods and/or perceptions of road safety may be important components of strategies for increasing LTPA (Timperio, Crawford et al.). Other findings also suggest the importance of accessibility and distance to recreation facilities (Mota, Almeida, Santos, & Ribeiro, 2005; Sallis et al., 1990). Furthermore, environmental characteristics might play a different role according to the PA characteristics, for example, non-organized or organized ones (Mota, Almeida, Santos, Ribeiro, & Santos, 2009). This is noteworthy, because it has been pointed out that it is important to study the specific behavior related to the environment rather than a general behavior (Sallis et al., 2000). Indeed, we did not find significant associations between environmental characteristics and organized PA, but there were several significant associations with non-organized PA in adolescents (Mota, Almeida et al.). This reinforces the idea that specific behavioral contexts might be associated with different environmental variables, which was already shown in studies with adults (Humpel et al., 2004). For instance, our findings showed that different dimensions of environmental variables such as accessibility to facilities, aesthetics, and connectivity of the street network; infrastructures for walking and cycling; and recreation facilities were associated to girls' non-organized PA participation (Mota, Ribeiro, & Santos, 2009). In fact, our data are in accordance with several studies showing that different environmental features, such as the number of infrastructures and sports facilities in the area, were positively associated with more daily physically active individuals, especially girls (Brodersen, Steptoe, Williamson, & Wardle, 2005), and with walking (Hume, Salmon, & Ball, 2005). Both factors are to some extent location specific (Ommundsen et al., 2006), which is an important issue with regard to LTPA. For instance, a recent review showed that people in active-friendly environments are more likely to be physically active in their leisure time (Owen et al., 2004). Therefore, the location of home in relation to sport and PA facilities and living environment, in general, influences PA and sport participation (Yang, Telama, Laakso, & Viikari, 2003).

In summary, the physical environment, particularly the place where people live, presents a set of features and characteristics that have been studied and discussed as potential barriers or facilitators to the practice of physical activity or sports (Owen et al., 2004). The neighborhood is considered a key item in the examination of outdoor physical practices, offering the opportunity for non-expressive forms of PA such as walking and riding a bicycle (Carver, Timperio, & Crawford, 2008). Indeed, creating social support and providing PA facilities within neighborhoods, particularly

in low-SES neighborhoods, is desirable, because the existence of good places to spend the free time is associated with an important stimulus for PA (Molnar et al., 2004; Romero, 2005). Nonetheless, the specificity of the type of practice and its associated environmental variables should continue to be studied in order to manage the definition of specific guidelines for each context (Loureiro, Matos, Santos, Mota, & Diniz, 2010) in order to promote healthy lifestyle choices and active leisure opportunities.

Leisure-Time Physical Activity and Physical Education Enrollment

Creating positive experiences and opportunities for PA in schools might be critical for future participation in PA. An important aim of the schools, through physical education (PE), is to help youngsters to adopt physically active leisure lifestyles. Even nongovernmental organizations such as the World Health Organization (WHO) identify schools as one of the most cost-effective investments a state or nation can make to improve education and health simultaneously (WHO, 2004).

PE is in a uniquely favorable way to increase physical activity and fitness for children, as it has the potential to promote active lifestyles as well as teaching general movement and behavioral skills (McKenzie & Lounsberry, 2009). Although the importance of leisure time has increased, schools have a strong influence on the use of time and on the life of many young people (Strong et al., 2005). Despite the fact that leisure time is a key issue with regard to social activities in which youngsters take part, schools still offer a context for developing social relationships that can be attained through sports and PA. For many children, school physical education classes are the only outlet for them to exercise and to gain the benefits of physical activity. The National Longitudinal Study of Adolescent Health (Gordon-Larsen et al., 2000) showed that students enrolled in PE were more likely to perform at higher levels of weekly moderate-to-vigorous physical activity. Pate, Dowda, O'Neill, and Ward (2007) also found that adolescents in the USA who participated in PE classes reported a higher overall physical activity levels. Tassitano and colleagues (2010) reported that US students attending two classes per week had a 27% higher probability of being classified as physically active according to the current international guidelines, by comparison to students not enrolled. Participation in school PA is particularly relevant for students from low-income families or those who have lower educational levels, who are at greater risk of inactivity and being overweight (Gordon-Larsen et al.) and who may be less likely to participate in organized physical activity during leisure throughout childhood and adolescence (Findlay et al., 2009).

Physical activity during school hours may also play a key role in developing positive exercise behavior patterns in children. School's PA and PE need to be improved to encourage children to engage in substantial amounts of physical activity inside and outside of school. Indeed, four essential characteristics must be assigned to school programs: (1) they should include culturally relevant activities and low-cost

resources; (2) they should emphasize enjoyable, easy-to-implement activities; (3) physical education should include health promotion components in the curriculum; and (4) activities should be easily maintained (after the intervention period) and possible to disseminate to other schools.

Despite a scarcity of evidence of the interrelationship between PE participation and LTPA levels in adolescent's subgroups, intervention studies have demonstrated that the school environment and PE classes are promising contexts in which to promote physical activity among youth (Hoehner et al., 2008). Results of an intervention study carried out in two Brazilian contrasting cities (Florianopolis and Recife) showed that the control group reported significantly fewer days per week accumulating 60 min of moderate-to-vigorous physical activity (MVPA) compared to their experimental peers group. Furthermore, the prevalence of inactivity rose in the control and decreased in the intervention group (de Barros et al., 2009). Moreover, youth's leisure-time choices are influenced by different factors, where fun, challenge, and perception of competence are required to promote healthy and active lifestyles (Trudeau & Shephard, 2008). The available research on this subject seems to point to a lack of adjustment in the proposals submitted by the school during adolescence and the type of activities to which they adhere outside school. Therefore, appropriate strategies might be targeted for individuals, varying in activity levels, especially those with little or no regular participation. In such cases, it is expected that these school activities may contribute to proper emotional behavior of young people during leisure time, encouraging and modeling, therefore providing an understanding of physical activity as a value to be preserved within a system of values (McKenzie & Lounsberry, 2009).

Concluding Remarks

Social changes from rural to industrial society and from industrial to postindustrial or the modern age have drastically changed the lifestyle of society (Eaton & Eaton, 2003). The decrease of the physical work, the increased value of scholarship, the improvement in the quality of life, and the time spent in leisure activities are some of the factors that have impacted the PA of the citizens in the developed countries (Owen et al., 2004). Actually, there has been an increase in the physical inactivity and sedentary behavior, which has impacted the level of health, the quality of life, and the autonomous function of the population, which have caused major public health problems in the twenty-first century (Owen, Healy, Matthews, & Dunstan, 2010).

Evidence indicates that what an individual does during leisure time might affect illness, disease, and even longevity (Leitzmann et al., 2007). Researchers have shown that adequate participation in regular physical activity during adolescence might be of critical importance for the prevention of chronic diseases in adulthood (Katzmarzyk, Church, Craig, & Bouchard, 2009). Beyond physiological benefits, regular PA might also contribute to psychological and social benefits (Burton, Pakenham, & Brown, 2009). The promotion of physical activity/exercise needs to

be more pronounced. Enjoyment and happiness are two main issues that physical activity and exercise programs should address no matter what the age group or setting is (Piqueras, Kuhne, Vera-Villarroel, van Straten, & Cuijpers, 2011). As a matter of fact, long-term engagement in exercise and/or behavioral change is meaningless without a consistent motivational environment focusing on creating *autonomy-supportive* interventions (Silva et al., 2011).

Leisure-time experiences seem, therefore, important in the development of programs that challenge young people to test their skills individually and externally. Challenges that require their involvement, commitment, and occupation of free time activities and structured programs with meaningful experiences provide foundations for extending such experiences to all of life (Lloyd & Auld, 2002). Quantitative research clearly demonstrates that the behavior of individuals is influenced not only by objective experience but also by the perception of these experiments, although cultural context plays an important role in such perceptions (Iwasaki, 2007).

Physical activity can be embedded in a pedagogical model ensuring a sense of autonomy and personal responsibility. Hence, the sport and/or PA may be a health project at the time that is associated with the qualitative level of the subject's life by reference to their autonomy and responsibility. Additionally, it must be highlighted the idea that the social activities are extremely important in adolescents' leisure time. The idea that is established in the context of leisure time/activities is the role of physical activity in improving the person's quality of life (QOL). Indeed, while biological parameters have long been associated with PA and exercise, their role in well-being and quality of life should not be considered negligible. The major feature of the QOL concept is its multidimensional nature. In its conceptualization normally come dimensions such as cognitive, emotional and psychological, socialization, and other areas related to the perception of health and well-being (Goodman & Whitaker, 2002). There is accumulating evidence suggesting that positive well-being is associated with healthy behavior, lower delinquent activity, higher incomes, superior mental health, higher education, long life, better performance ratings at work, as well as an improved social and personal functioning (Burton et al., 2009). From this perspective, the QOL should consider an optimal relationship with the lived experience rather than objective factors such as activity or income or relatives' perspectives (Rejeski & Mihalko, 2001). Thus, leisure time is no longer restricted to discretionary time, but also becomes a marker of an individual's state of personal health and well-being. These findings should be considered in future strategic developments targeting physical activity enhancement. Indeed, intervention strategies should be developed to reinforce recreational opportunities to be active activities. A special focus should be placed upon partnership-based action to promote physical activity in a way that allows for success, fun, and the opportunity to socialize with others.

We cannot separate our life experiences from the biological and social aspects of the society in which we live. Hence, the social responsibility is to facilitate the training (of being active in sports) based upon an educational and a social project that includes the dimension of autonomy and responsibility. It is the person's responsibility to assume this sense of identity and lifestyle project. Additionally, one must be willing to extend his or her personal development as much as possible according to single interpretations of individual action; this is an important characteristic of

contemporary societies (Caldwell, 2005). Therefore, healthy living is not only associated with disease prevention but also helps people to develop a lifestyle that will maintain and enhance one's state of well-being. Leisure-time choices have a pronounced influence. By incorporating PA into leisure activities, people can counteract many of today's sedentary lifestyle-related noncommunicable diseases as well as enhance their health-related quality of life (HRQoL). In support of these points, it has been previously demonstrated (Leinonen, Heikkinen, & Jylha, 2001) that a positive association between PA and self-reported HRQoL exists among older adults. Rejeski and Mihalko (2001) concluded that PA might provide a global indicator of health and functioning through which deterioration in health and functional performance can be perceived and reflected in everyday life. That is why leisure education can have a significant effect on active leisure participation and life satisfaction. In this regard, the development of both social and physical environments that encourage and support active living is an important consideration (Sallis & Owen, 1999).

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