

# REPORTED ILLNESSES IN MEN AND WOMEN, PHYSICALLY ACTIVE AND INACTIVE, YOUNG ADULTS AND AGED PEOPLE

Alberto De Vitta<sup>1</sup>

Anita Liberalesso Neri<sup>2</sup>

Carlos Roberto Padovani<sup>3</sup>

<sup>1</sup>Course of  
Physical Therapy,  
Post-Graduated  
Program in  
Collective Health.  
University of the  
Sacred Heart (USC),  
Bauru, São Paulo.

<sup>2</sup>Professor,  
Universidade  
Estadual de  
Campinas (UNI-  
CAMP), Campinas,  
São Paulo.

<sup>3</sup>Professor,  
Department of  
Biostatistics at the IB  
– UNESP – Botucatu,  
São Paulo.

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## ABSTRACT

*Specialized literature and professional practice have showed a strong association between physical and subjective well-being, gender, age, and regular physical activity. This study was aimed for comparing men and women, young and older adults, active and sedentary people. The subject were 200 voluntary, set in two groups containing 100 individuals each, matched by age. In the first group from 20 to 35 and in the second from 60 to 70, each group had 50 men and 50 women, 50% of sedentary people and the other 50% active. A questionnaire was addressed for a survey of the practice of physical activity and reported illnesses. Data were submitted to descriptive statistics and tests of contrasts of binomial populations (GOODMAN). The results were that independently of age and enrollment in regular physical activity, physically inactive women and aged people showed the greatest rates of diseases. Assessments of health are important mediators of quality of life, which is affected by regular practice of physical activities. Improving this practice means promoting successful development and successful aging.*

KEY WORDS: Physical activity; Gender; Age; Reported Illnesses

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## INTRODUCTION

Studies indicate that diseases are important causes of decline of the physical and psychological well-being in all ages (STEINHAGEN-THIESSEN; BORCHELT, 1999).

Diseases in the elderly have common characteristics to other ages as well as some aspects typical of this phase of life. The rate of lethal diseases is greater among elderly men than among elderly women. In the latter the non-fatal diseases are more predominant, although disabling and chronic such as osteoporosis, arthrosis, back-bone problems and hypertension). Among men prevails coronary disease. Elderly women have high rates of morbidity but show mortality rates lower than men for a same disease (CAMARANO et al., 1999; NÉRI, 2001).

In young adults the top diseases are muscle-skeletal diseases. For the economically active population in the age range of 20 to 40 years, presently, the repetitive effort lesions or the osteomuscular disturbs related to work (DORT) are the disease with greater prevalence. In the USA, in 1994 there were 332,000 of such cases – 65% of all diseases. In Brazil the situation is probably similar to the industrialized countries. In the Center of Reference for Health of the São Paulo State (CEREST), in a sample of 620 patients from 1990 to 1995, 87.0% were females and, among them, 45% age varied from 26 to 35 years old (BRASIL, 2000).

In the last years, health professionals have emphasized the preventive role of physical activity, which can be defined as any body movement produced by the skeletal muscles and that result in expanded energy, including exercise, sport, work and domestic activity (BOUCHARD, SHEPHARD; STEPHENS, 1993).

The regular practice of physical activity, together with non smoking and non alcohol drinking, adequate food, medical interventions, for example, with drugs that reduce blood pressure and cholesterol, social connections, sense of control and of self efficacy and continuous personal growth, are factors that influence the quality of life. Active individuals shows less chronic degenerative diseases, longer life and less symptoms than the inactive ones (MOREY et al., 1996). De Vitta, Néri and Padovani (2003) studied the relation between the perceived muscle-skeletal discomfort and the level of physical activity in 200 male and female, active and sedentary, young adults and elderly individuals and concluded that the elderly, females and sedentary showed greater frequency of discomfort in the last six months and seven days.

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Among the diseases whose incidence and burden are reduced by physical activity are the heart diseases, hypertension, diabetes, osteoporosis and some types of cancers (HUANG et al., 1998; KOO; ROHAN, 1999). Coupland, Wood and Cooper, (1993) report that physical activity is a factor of functional protection in all ages, making possible a better quality of life for men and women. Epidemiological studies show an inverse relation between physical activity and the prevalence of hypokinetic diseases. The regular physical activity improve bone density and diminish bone loss as well as the risk for fractures.

Wannamethee, Shaper and Alberti (2000) studied the relations and between physical activity and the incidence of coronary disease and diabetes in 5159 individuals in the age range of 40 to 59 years. They noted that the practice of regular physical activity of moderate intensity is associated to decrease in diabetes and in the risk for coronary disease. Chien et al. (2000) studied the relation between the level of physical activity and the bone density in 76 post-menopausal women in the age range of 42 to 65 years old. They found that active women showed better levels of bone density than the inactive.

Empirical evidences show clear indication in what regards the importance of studies on reported diseases and the level of physical activity in men and women of different age ranges. The benefits of physical activity regularly practiced extrapolate the individuals to influence the community in which they live. Reasons for that are the possibility for them to be more proactive and productive and for inducing less social burden in cases of disease and disablement. The educational effect is also important since they can act as model for development and for succeeded aging for their pairs.

In this sense, the objective of the present study is to compare men and women, young adults and elderly, sedentary and actives, in relation to the proportion of occurrence of reported diseases.

## MATERIALS AND METHODS

A convenience sample of 200 individuals was divided in two groups with 100 each. The first group included young adults age ranging from 20 to 35 years old. The second, included elderly with age ranging from 60 to 70 years. Each group had 50 man and 50 woman. The other studied aspect was the involvement with physical activity, thus in each gender sub-group (50 individuals), one half were active and the other half was sedentary. For inclusion in the

active group the criteria was the continuous participation in physical activity, preferably aerobic, in the last six months, performed two or more times a week for more than 20 minutes each day. According to Hovel and Hofster (1992) these conditions are enough to induce consistent adaptation, in the cardio vascular and muscle skeletal systems, with gains associated to the regular practice of aerobic physical activity. None of the individuals was an elite athlete nor a professional sportsman. The inclusion criteria for the sedentary group was the non-participation in any aerobic physical activity in the last six months.

Due to the objective of the study, all individuals should be involved in occupation predominantly concerned in sedentary activities for more than one year. Criteria to qualify individuals as sedentary in the workplace was the estimation of the caloric intake at work, that is, to have an energetic expenditure equal or less than 180 Kcal/h (COUTO, 1995).

Description of the reported diseases were obtained by the following question: which disease(s) do you presently have? The question posed the following possible answers: heart disease, liver disease, kidney disease, lung disease, muscle-skeletal disease, diabetes and others. The application of the instrument was done in scheduled sessions with permission of the superiors and consent of the participant that were previously informed on the objectives of the study and its ethical aspects.

For the comparison of the proportion of occurrence of diseases according to gender, age range and level of physical activity it was used the test of Goodman (1964; 1965). The level of significance for data analysis was 5% for all comparison made.

## RESULTS

Out of the 200 cases studied, 109 did not reported any disease against 91 that reported. In the latter, eight were young male adults, 17 were young female adults, 20 elderly males and 46 elderly females. It was observed that in all groups the muscle-skeletal diseases were the one more frequent. Among elderly the rate of cardiac disease is comparable between men and women and it is also comparable the rate of muscle-skeletal disease reported by men.

In TABLE 1 it can be noted the predominance of reports of disease by elderly females and the opposite by elderly males. In the latter the absence of disease is significantly superior to its presence.

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In female young adults, taking the sedentary group in account, the occurrence of reports was significant.

TABLE 1 – Results of the test of contrast for intra and inter group comparison between the proportion of occurrence and non-occurrence of disease according to gender, age and practice of physical activity.

Gender	Age group	Physical activity	Disease		Level of significance of the differences
			absent	Present	
Males	Young adults	Sedentary	0.680	0.320	p<0.05*
		Active	0.920	0.080	p<0.05*
	elderly	Sedentary	0.640	0.360	p<0.05*
		Active	0.840	0.160	p<0.05*
Female	Young adults	Sedentary	0.360	0.640	p<0.05*
		Active	0.520	0.480	p<0.05*
	elderly	Sedentary	0.240	0.760	p<0.05*
		Active	0.160	0.840	p<0.05*
intergroups comparison			Disease		
			Absent	Present	
(sedentary x active)/YMA			p<0.05*	p<0.05*	
(sedentary x active)/EM			p>0.05	p>0.05	
(sedentary x active)/YFA			p>0.05	p>0.05	
(sedentary x active)/EF			p>0.05	p>0.05	
(Young adults x elderly)/SM			p>0.05	p>0.05	
(Young adults x elderly)/AM			p>0.05	p>0.05	
(Young adults x elderly)/SF			p>0.05	p>0.05	
(Young adults x elderly)/AF			p<0.05*	p<0.05*	
(males x females)/SYA			p<0.05*	p<0.05*	
(males x females)/SE			p<0.05*	p<0.05*	
(males x females)/AYA			p<0.05*	p<0.05*	
(males x females)/AE			p<0.05*	p<0.05*	

\*Significative

YMA: Young male adults

EM: elderly males

YFA: young female adults

EF: elderly females

SM: sedentary males

AM: active males

SF: sedentary females

AF: active females

SYA: sedentary Young adults

AYA: active young adults

SE: sedentary elderly

AE: active elderly

In relation to the comparison between gender, irrespectively of the age range and physical practice, the differences of answers are significant all the time. A similar fact occurred in the comparison of young male adults with active female elderly and in the comparison of sedentary and active in young male adults.

## DISCUSSION

According to the report of individuals in irrespectively of age and involvement with physical activities, elderly and non-elderly females reported more disease than males. An almost universal data is that women are more physically fragile than men but have longer life span than men, an advantage that can be partially attributed to the differences in diseases occurring in each gender. There are many explanations for the grater longevity and morbidity among women. One of them is genetic: women would be hereditarily favored, besides the hormonal protection along their adult life, a reason for showing less coronary disease and hypertension. The other reason is due to differences in the hypothalamic-pituitary-adrenal (HPA) system. In women there is an increase in the levels of cortisol and corticotrophine and, therefore, a decrease in the HPA, mainly in the age range of 62 to 83 years (GREENSPAN et al., 1993).

Another hypothesis to explain the different longevity and health between men and women has relation with social factors. To some extent women would be more preserved than men from the typical risks at work, to smoking, to alcohol and violence. However, as they are usually poor and with less education, they have more chance to live alone and, besides that, they have to help their family, taking care of the husband, of the elderly, the house and children. That means that women are more fragile and tend to have more burden, what worsen its quality of life (NÉRI, 2001).

Comparative studies with individuals of various ages revealed that disease occur more frequently among elderly than young adults. Data from the National Center for Health Statistics revealed that 55% of individuals with more than 65 years of age show cardio vascular diseases, being hypertension the most prevalent with rate of circa 35% (SCHAIE; WILLIS, 1996). Epidemiological studies report that the prevalence of hypertension among Brazilian elderly is high: 65% of them have hypertension and, among women with more that 75 years old, the prevalence is 80% (TERCEIRO CONSENSO, 1998).

The increase in disease associated to ageing can be explained by psychological factors (social integration and personal control), environmental (social status and autonomy) and life style. Loss of social status, decrease in the perception of control and absence of contact with other partners can provoke increase in the levels of cortisol, and, thus, a decrease in the HPA system leading to increase in the levels of glucocorticoids (GC), seric glucose and lipids, immunosupresor and cardio vascular tonus, increasing the risk for disease (FINCH; SEEMAN, 1996). In what concern the life style, measures

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such as an adequate diet, non smoking, regular practice of physical activities and keeping ideal weight have been indicated as important items for preventing heart and muscle skeletal disease, cancer, diabetes, among other (FERRUCCI et al., 1999).

Data of the present study reveal association between the level of physical activity, disease for young males and females and for elderly males confirming the initial hypothesis. However, in the specific case of elderly women, the active ones report more diseases than the sedentary, which is opposed to the expected results. Perhaps his result can be explained by the social characteristics of this sub-group. The elderly were recruited in the Open University for the Third Age and in convivence centers that, nowadays, in Brazil, are privileged spaces to the ascertainment of the identity and in the search for the woman rights from the lower middle class. One of the ways these groups seeks to achieve these rights is by activity, by productivity and through self-affirmation that, in most instances, results in denying aging and its limits. It is possible that part of the group did not reported diseases just because of that. To those that reported, disease are not reason enough to prevent them to participate. The very opposite is that the dissemination of the ideology of elderhood as state of mind and that physical problems due to biological factors and life style can be softened or ameliorated by means of physical and social activity (NÉRI, 2001).

Physical activity is an important component in programs for health promotion and is usually prescribed aiming to improve and prevent diseases of the muscle skeletal system, chronic cardiac disease and diabetes, among others. Studies in animals, observational studies in man and vertical studies comparing active and sedentary individuals, aiming to verify how physical activity reduce the risk for cardiac disease and improve miocardic function after heart attack, report that the main mechanism include the reduction of blood pressure, increase in the level of HDL cholesterol, increase in the miocardic oxygen and to the sensibility to insulin; decrease in the cardiac frequency and of the systolic blood pressure; reduction of the risk for thrombosis due to the decrease of platelet adhesion and aggregation, promotion of fibrinolysis and reduction of ventricular arrhythmias (LEON; NORSTRON, 1995).

In what regards osteoporosis, the physical activity reduces the rate of bone loss due to the normal aging process and provokes an increase in the bone mass, regardless of gender, age or level of initial bone density. One of the explanations refers to the hypertrophy to which bone responds when surpass its stress limit. There is a local response to mechanic load to which it is submitted, whereas

the skeletal system as a whole responds to the levels of calcium. The mechanism that leads to bone formation is connected to the negative charge formed in the compressed segment when bone is put into tension (OKUMA, 1997).

## CONCLUSION

Connecting the data obtained in the present study with the available in the literature it is possible to suggest that the presence of disease is determined by a great variety of genetic, biological, environmental and life style factors that affects differently men and women of various sages. Studies are needed to examine the intrinsic and environmental factors associated to gender and age, which can be a basis to develop to interventions aiming the sustainability of the health of populations.

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