

## Overcoming risks in health-related physical activity

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**Abstract:** The risk factor logic that prevails in the epidemiological investigations of the Health field has been reproduced in Physical Education, specifically in the hegemonic trend called Health-related Physical Activity. This work aims at presenting and discussing the main historical milestones and highlighting the effects of this paradigm in such knowledge fields. At the conclusion, a form of Critical Epidemiology appropriation will be presented as an illustration of the attempt of overcoming with banking sector's workers.

**Key-words:** Physical Activity. Public Health. Risk Factors. Epidemiology.

### 1. Introduction and objective

In previous works (MATIELLO JÚNIOR; GONÇALVES, 2001, 2004), we recovered some aspects of

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knowledge production and hegemony trends in the field called Health-related Physical Activity, by analyzing its support in restricted cuttings of biological and behavioral-base subjects, and has as its subject matter the physical fitness as the main (virtually the only one) health mediator.

Besides, we emphasized that from the broad spectrum of the Brazilian Collective Health issues, this hegemonic trend assumes a commitment with the research agenda imported from other knowledge centers (combat against sedentariness and prevention of chronic-degenerative diseases), which, however important, restricts the political and scientific action of Physical Education, provided that it establishes priorities in a decontextualized manner on our population health; stimulates verticalized relations of the academy on popular knowledge and superposition of the technical action to the detriment of the educative one from a critical perspective. Finally, we also presented ethic aspects of intellectual alignment process intended to meet the need to create new markets.

With the purpose to proceed with some of those issues and examine them in depth, this work aims at presenting and discussing theoretical and methodological bases of the risk paradigm hegemonically installed in the Health field, which exerts a strong influence on Physical Education knowledge production. The main historical milestones will be rebuilt and their application effects highlighted. At the conclusion, Critical Epidemiology elements will be presented as an alternative to overcome the risk focus.

## **2. About causality and the risk factor paradigm**

Within the traditional epidemiology, the core aspect is to deal with the relation established between *causes* (exposure to factors) and their *effects* (diseases), considering the causal association when the alteration in frequency (or intensity) of one of the elements brings about a change in the other. That is this way to comprehend the people's health determination process what we call causality, whose use may occur both within the individual (the clinic) and the collective sphere (ALMEIDA FILHO, 2000).

Along the mankind history, the explanations to the disease causes have been quite diversified (ROSEN, 1994), with their construction limited not only to the human knowledge's reach, but overall, to the "prevailing way to interpret the relations with nature and individuals among themselves" (SABROZA, 1994, p.7). This assertion has some important meanings, among which the certainty that the said explanatory theories have not evolved in a linear way, but through the confrontation of ideas, the dispute for interests and power maintenance – with advancements, long stagnations and ongoing backsets.

In regard with the modern epidemiology, Susser and Susser (1998) explain that it was shaped within the context of the distresses of the XIX century, when England was being constituted as the vanguard of industrialization and urbanization. Thence, evaluations say that there are at least three ages in epidemiology.

In the first of them, the sanitary statistics age, the miasma theory prevailed during most of the XIX century. Statistics revealed the high occurrence of disease and death in poor districts of England, France, Germany, Scandinavia and the USA. The miasma assumption was that environmental issues – putrid emanations derived from the ground, water and air – caused the population poisoning and they were expected to be reduced through the application of sewerage and drainage, waste collection, public baths and improvement of dwellings (what occurred indeed) and, consequently, poverty could be “expelled” (what have not occurred). Moreover, there were voices dissonant from this theory, which explained the fact in another manner, comprehending that poverty was a cause and not a consequence of that sanitary context. Despite the disagreement, there was a common sense that those issues had a social ground and that the proper measures to solve them should comprise the whole society.

At that period, in England, the epidemiologists were supported to perform a mapping on the death rate excess in the country in relation to the dwelling conditions, childhood cares and specific diseases. They studied productive activities by performing national inquiries about food conditions, infestation by parasites and the respective food contamination. Thus, they provided a relevant contribution to improve the population’s health conditions, although they are mistaken about biological specificities, that means, in their theories on putrid emanations. In that occasion, there were advancements in microbiology and their theories could not withstand this new paradigm.

At the beginning of the works carried out by Louis Pasteur about the epidemic that affected silkworms – whose identified cause was live organisms -, and studies carried out with humans about the cholera, tuberculosis, carbuncle and Hansen's disease transmission – confirming the existence of laboratory observable microscopic beings, the new paradigm established was the Germ Theory, a perspective limited to a causality model in which specific agents were related, one by one, to specific diseases, and such focus remained as hegemonic until the middle of the XX century (SUSSER and SUSSER, 1998).

Therefore, specific agents were identified based on the isolation and culture of the places affected by microorganism-caused diseases, on the experimental reproduction and lesion reproduction. The responses aimed at avoiding transmission through vaccines, patients isolation and, as a last resort, through the administration of chemotherapeutic drugs and antibiotics. Thus, the miasma theory was gradually falling into oblivion, where the decline of populations epidemiology, the environmental exposures and the diseases social dynamics occurred simultaneously, and was substituted by the emphasis on the infectious agents control.

If until today there are no doubts that the Germ Theory formulators established exact causal relations for a great number of diseases, it's worth noting that their narrow view delayed the creative use of their findings on behalf of the effective progress of the epidemiological science, where there were some that asserted that the decline of infectious diseases in developed countries was rather due to nutrition or the improvement of the

society's life standards than to the scientific advancements of that period.

When establishing a new planetary geopolitical configuration arising from the end of the Second World War, there came the rising of the chronic diseases over the infectious ones in countries that restructured their production system, giving continuity to the capitalist project. Guided by the profit and accumulation logic – in which the worker is progressively alienated from his work, and must perform tasks that other people have conceived without comprehending its social destination (RIGOTTO, 1993; AUED, 1999), the outcome was the growing degradation of the workers' class health conditions, what roused aspirations to reinsert the causality discussions as arising from social contradictions. In spite of the working class' clamors in England, the responses given by the Parliament in that country were, at the same time, measures limited to the category organization, as well as laws that would attenuate the occupational damages that harmed the work force (FACCHINI, 1993), without changing the capitalism essence and, therefore, the forces that determine health degradation.

Contributing to the failure of the paradigm prevailing at that time, the antibiotics and chemotherapy drugs used were not useful to combat the emerging standard injuries. Moreover, as time went by, it was noted that the available medicines were not the primary factor for the continuous decline of the infectious illnesses, as it was believed to be. This marks the early age of the chronic disease and the corresponding black box paradigm, because at that moment, the rising death rate due to chronic

diseases had already exceeded those caused by infecto-contagious diseases. The chronic diseases that threatened public health in a more express manner became the primordial subject matter of the epidemiological investigation and the groups assessed were selected among those under evident risk.

Based on studies of control cases and groups about smoking and lung cancer, and on the first group studies about the coronarian disease, which defined the serum cholesterol and tobacco use as risk factors, the black Box paradigm correlated exposure to result, “without it implying any obligation to interpolate intermediate factors, or even pathogenesis, although not all of them neglected such interpolation” (SUSSEK and SUSSEK, 1998, p.195).

In fact, in the black box, the treatment given to reality, to the events experienced in life, gives special attention to the so-called risk factors with a view to isolating them for a better comprehension and intervention, and this atomization (GONÇALVES; GONÇALVES, 1988) makes the psychic and social dimensions liable to assume a leveling to the biological attributes. It allows, for instance, authoritarian power actions, very bad structural conditions, inaccessibility to properties and loss of personal habits considered as “healthy” to be extracted from their political context, without considering that populations are not only collections of conveniently grouped individuals, but they consist in historical entities with their own culture, organization of social and economic divisions (PEARCE, 1997).

### **3. Operational risk limits: what can and what cannot be calculated**

In traditional Epidemiology or in the risk-factor one, there is in most studies the intention to make uncertainties measurable. Within this focus, two types of risk can be considered: one related to the perception lived – immeasurable uncertainty, and another one related to the measurable uncertainty, liable to quantification through probability laws (CASTIEL, 1994). The first case can be exemplified by the concept of danger when forwardly facing a hungry lion, or jumping without any protection from a high place, situations in which one does not have to make a big effort to foresee the outcomes, due to the comparisons to previous events (whose experiences do not necessarily need to be ours) that give us the dimension of the possible effects. In its turn, in the measurable uncertainty case, mathematic models that allow to establish a quantification are used and risk rates are estimated.

Thus, one of the basic characteristics of the focus is its conceptual inaccuracy, which varies according to the health definitions, its application purposes and contexts, as well as the measurement methods used. That is about “mental construction that correlates today’s actions and circumstances with an occasional future outcome” (BRICEÑO-LEÓN, 1998, p.127). In practical terms, its application logic occurs through induction, that means, the broad possibility of people inserted into another reality – when there are some similarities – suffering from the same damages can be estimated from epidemiological data of



certain population groups. Such similar characteristics can be, according to our concerns, for instance, the degree of participation in sports activities, what explains, in part, the fight against sedentariness today.

Through the establishment of the risks and the occurrence projections, prevention efforts are prescribed, fostering public politics and seeking to influence individual behaviors. Despite the virtues and successes of such focus, a lot of them though, its seducing and apparent functionality has been quite questioned, from several standpoints.

A question that foregoes and stands out from the others is the ideological one, because, from this standpoint, such approach has contributed to the preservation of old domination structures among social classes and guided actions that favor its employment as a category submitted to the growing medicalization. According to Castiel (1994, p.155), the result is:

[...] of reduction we could call pragmatic-functional type. Thus, the risk acquires the statute of an entity liable to intervention and, thus, an entity that generates the consumption of actions called specific therapeutic and preventive [...].

In regard to the associations with the preservation of the working class despoiling political-economic interests, the risk expression denotes the possibility of both occurrence and non-

occurrence of health-disease-related phenomena. We are induced to believe, from the workers' example, that they may suffer damages in their production activities, as they may not suffer them, always giving margin to doubts.

Thus, the risk identity is revealed as bearing at the same time objectiveness and subjectiveness, where the doubt attribute plays with imagination, necessity, fear and the pleasure of challenge. Therefore, we could even consider that the risk announcement bears along a power of enhancing the occurrence of damages to health, because there are the ones that want (and those that need as a survival condition!) to challenge their limits; in another situation, thinking that something is about to come assumes unreality features, because it's not tangible, reachable. Nevertheless, if the risk calculation is performed with data from other people's life, one might think that "it will not happen to me", even if all the evidences point otherwise. This verification is even valid for the sports people (athletes), in their permanent attempts to overcome their own limits.

Within this perspective, there are suggestions that the objective possibilities are broadened or reduced depending on the environment control, and/or the life conditions of the people concerned, as well as on their unsafe acts (that means, the risk behavior). The practical effect of this thinking, as aforementioned, are reform prevention measures, with the purpose to protect mainly the production activity, despite the emphatic announcement towards the people's health protection. This logic favors the perpetuation of system whose possibility to cause damages to workers is inherent to it, because, within the superficiality level, the essence of the processes from which

such problems come is not changed. This implies the idea that living is a risk and, therefore, it is normal to accept the possibility of work aggressions and, in general, we must be contented with the promises of risk reduction to the lowest possible.

Another problematic aspect presented in this scientific construct essence is the assignment of responsibility for the health-disease condition directly to people, provided that some behaviors and life conditions are analyzed as arising from ignorance and unwillingness to face adversities, not taking into account that the way of being is built through the interaction with other people and the environment, in a world of dynamic relations and full of antagonisms, and that decision-making does not depend only on reasoning and will power. This mistake, in general intentional, intended to cover the powerful interests with smoke-screen, is already widely known within the Public Health and Collective Health fields as victim culpability, of strong ethic trespass.

We can conclude that the risk concept is disputable, because it keeps identity with the possible and the predictable, in the presumption that the predictable can be identified and quantified through probability techniques, emphasizing, at first, the predictive dimension of the disciplines that make use of them (AYRES, 2005).

#### **4. Critical Epidemiology and overcoming the risk focus in Physical Education**

Among the large amount of authors that contributed to the social re-signification within the Health field, we are going to emphasize the development of one of the main contemporary thinkers of the so-called Critical Epidemiology (CE), the Equatorian Jaime Breilh, a member of Centro de Estudos e Assessoria em Saúde [Center for Health Studies and Assistance], situated in Quito. It is about comprehending science and health from a new epistemological, ontological and praxeological project, which fights for the popular emancipation, committed to the ethic for the worthy life of the “powerless people”.

In CE, epidemiology is understood as a set of concepts, methods and means of practical action that apply to the knowledge and transformation of health-disease in its collective (or social) sphere, having as the subject matter the processes that determine the production of specific health and disease conditions. It lies, therefore, in the consequences of the deterioration processes “[...] occurred at work and consumption of social classes and their fractions, the processes of which are linked to the general reproduction of the capitalist structure and to the political and cultural conditions arising from it” (BREILH, 1991, p.40). It aims at overcoming conventional and limiting forms of determinisms, arising from both the scientific positivism and the interpretation of Marxism that encircles and submits the social dynamics to the forms of material domains.

The Breilh's (1997) discussion goes towards the following direction: i) in effect, there are risks at the labor centers, but they do not cover the entirety of the determinant processes; ii) the work organization and division is not properly elucidated through the risk concept because it constitutes a determinant process of necessary and permanent character and not a mere contingent or likely hazard; iii) the concept can hardly bear the labor's contradictory nature, which is neither absolutely destructive nor absolutely salutary; and iv) the use of the term "risk" within the conventional context is strongly associated with the restrictive and static notion of the harmful phenomena of the labor activities.

Hence the author develops, in substitution, the process concept:

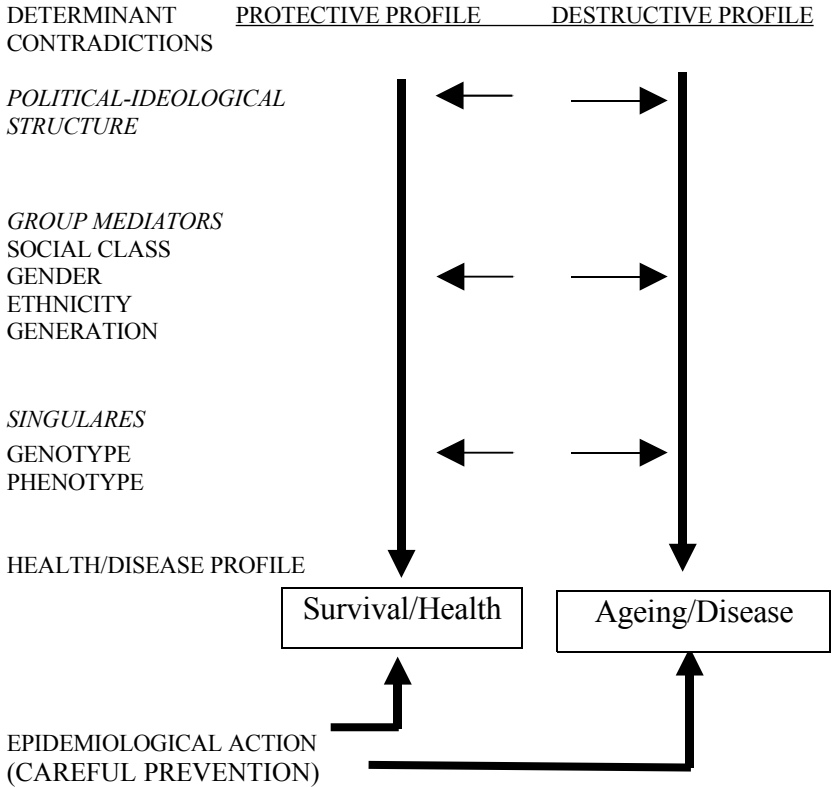
[...] that translates the reality dynamism [and talks about] destructive processes and favorable or protective processes in order to refer to the set of determinant factors that epidemiologically condition workers, whether in the productive space or in the consumption and the everyday life one [...] (BREILH, 1997, p.98).

Within such context, he emphasizes the need to investigate the objective reality under the dialectic focus, so that all the health determinants and their contradictions can be understood, showing "[...] their multiple and changing possibilities, without remaining sticking to conventional

problems that can often be absorbed by the patronal discourse” (BREILH, 1997, p.100).

In the attempt of articulation among different reality levels, he limits the particular processes that participate in health-disease, their relations and internal hierarchy, seeking “[...] to define the place and the relative importance that the general disciplines may take in the development of the particular scientific contents within the health field” (BREILH, 1991, p.197).

In relation to the labor’s contradictory nature, Breilh (1997) affirms that the protective and destructive aspects are in constant opposition, across all social life levels (from superstructure to the subjects’ uniqueness), and how people bring different biological heredities and are molded in peculiar environments, the same stimuli produce also different effects; thus, health-disease becomes a circumstantial state, a result of those movements and constant oppositions of all life dimensions. According to our understanding, we could talk, illustratively, about a current account balance, in which there are concurrently credits and debits that give a dynamic character to the account holder’s status. The Figure 1 presents a model related to it:



**Figure 1 – Model for the study of the contradictions that determine health-disease**

Source: Breilh, J. *Nuevos conceptos y técnicas de investigación: guía pedagógica para un taller de metodología*. Quito: Ediciones CEAS, 1997.

There are other important conceptual changes: instead of the conventional *exposure* (to risk factors), used to refer to the situation in which someone is liable to accidents, diseases, death, it is preferable to use the term *imposition*, because so many times one has no freedom to make choices, being subject to processes that undoubtedly cause health destruction. It is within this context, for example, that workers endeavor to strictly fulfill their management requirements, even if they are aware of the insalubrious and unworthy work conditions, provided that the fear of retaliation is quite present in times of high unemployment rates and concentrated power of capitalists.

In practical terms, Breilh (2006) elucidates that if we applied the risk-factor interpretation logic in a monopolistic exploration scene, as the flowers agroindustry in Equator, we would be admitting that the increase of the requirements for the production of thousands of “perfect flowers” constitutes only a risk to workers’ health. This fact is equivocally considered as beyond their lives, as if the aggression were occasional, when it is indeed part of a highly insalubrious and permanent process in the peasants’ social reproduction and inscribed in the dominant logic of the sector’s monopolies (BREILH, CAMPAÑA, HIDALGO *et al.*, 2005).

Moving towards the conclusion, we found it interesting to reflect about some aspects of labor gymnastics (LG) – one of the remarkable expressions of the health-related physical education – and about how it has been proposed in the labor universe. Guided by the CE references, in this exercise, it is also possible to discuss about alternatives to overcome the risk-factor logic taking the banking sector context as a reference.



In this manner, in Brazil, this sector's development milestone is linked to the military dictatorship, provided that the coup was articulated between bankers and manufacturers with foreign capitalists, with the purpose to combat the organization and the political force acquired by workers at that time (MICK, 1995). In late 80's, favored by the long period of high inflation rates, there were suitable conditions so that the biggest and the most complex financial system in Latin America could be established in the country (FEBRABAN, 2005).

Nowadays, the financial system has a standout role in the wide globalization process and has compelled governments towards the adoption of measures favorable to it (MINELLA, 1997), participating in the direction of several class representation bodies; in the financing of candidatures at the parliament and the executive power and influencing the political decisions across all public administration spheres.

In light of such capital concentration <sup>1</sup>and power, the national banks restructurizations (opting for outsourcing; labor enhancement/precariousness and substitution of thousands of human beings for machines), which determine the workers' life and health conditions <sup>2</sup> (SEGNINI, 1999), can not be

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<sup>1</sup> The Correio do Povo Newspaper (2006) informed that in 2005 the seven largest Brazilian banks collected all together, in tariffs, approximately R\$ 31 billion; this means more than the total collection of the Brazilian States (only behind São Paulo). The segment leader, with a billing above that of important banks from the USA, could cover the budgetary expenses of Roraima with the tariff revenue for one decade.

<sup>2</sup> Since the 60's, the banks have been submitted to a strong informatization and automation. However, this did not mean better work conditions, because their employees were more and more under pressure to work for many hours, with a salary decrease and under a high productivity rhythm and internal competition. Rigotto

comprehended as an isolated fact or a chancy work, but as inherent to the capitalism reestructuralization and expansion processes.

Regarding the impacts on health, labor automation and intensification have caused the RSI<sup>3</sup> (Repetitive Strain Injury) evolvement, with a huge growth during the 90's, a fact that required frequent collective negotiations by the labor union.

Another relevant impact refers to mental disorders. According to Agência Brasil data (2006), among the 2,609 bank clerks from 28 different public and private banks in the country, more than 40% suffered moral aggressions at work and 30.52% felt mental stressed. From 2000 to 2004, the Instituto Nacional de Seguridade Social – INSS [National Institute of Social Security-INSS] announced the increase of 65% in the number of diagnoses with mental disorders (PERNAMBUCO'S BANK EMPLOYEES UNION, 2006).

Considering the extreme complexity of this situation, in which employers have enough powers to oppress the subaltern class in different forms, it is really important to analyze how Physical Education faces such problems.

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(1998) explains that in 1990, the Brazilian financial system workers represented 1.7 million and in 1995 this number was expressively reduced to 400 thousand, that means, over one million unemployed people in only five years! In its turn, Xavier's study (1998) shows that, in the period between 1993 and 1995, one bank clerk committed suicide every fifteen days.

<sup>3</sup>In 1997, with the new Norma de Avaliação de Incapacidade [Incapacity Evaluation Standard] of INSS, the RSIs start to predominate the DORT (Labor-Related Osteomuscular Disorders). However, according to Verthein; Minayo-Gomez (2000), this rank has as a presupposition the decharacterization of the disease-work relation, suggesting that the subject is predisposed to become sick.

Dealing with LG, it is possible to affirm that, in a general manner, this proposal is rather limited to meet the workers' needs, because it is primarily destined to the qualification for professional performance, so that they can produce more, get sick less frequently and, therefore, cost little for business people. Thus, its proponents have to “negotiate” its format according to ideologies, routines, times, rhythms, at last, to all that is part of the company's productive system and that is determined and determine capital. In other words, the LG needs to fit a space whose main function is actually to accumulate profits and, therefore, it explores the human work force.

Although the volume of publications about LG is not vast yet (ALVAREZ, 2002; LONGEN, 2003), it can be easily noted in some of them how this adaptation occurs and what, summarily, it is intended to:

- The LG consists in the application of daily exercises with a view to normalizing body capacities and functions for the work development, reducing the possibility to compromise body integrity (POLITO; BERGAMASCHI, 2002) and;
- This proposal can be conceptualized as a group of physical practices created from the professional activity exercised during working hours, with the purpose to compensate the structures most used at work and activate those that are not demanded, relaxing and tonifying them (LIMA, 2003).

Confirming such trend, quite adherent to the risk-factor logic, in the Mazzola's study (2003) on companies that adopted

the LG, it was concluded that workers' health and life quality are secondary, giving priority to the reduction of work accidents and occupational illnesses. This author evaluates that the employees believe in the LG implementation in order to meet the productive needs, like for instance, "to increase their professional performance"; "raise productivity levels"; "reduce the number of absences and doctor's statements" and "reduce the problems related to RSI".

It is also possible to affirm that the benefits highlighted by the LG definitions refer to any context, regardless of whether the proposal is directed to bank employees, metallurgists or garbage collectors, and therefore, regardless of their labor specificities and needs as individuals and a class. It is evident how the proposals are limited to the work environment (the LG classes last approximately five to ten minutes), focusing on their actions to compensate the structures demanded at the labor act and not on such wearing determinant factors, that means, the capital power structure that acts, overall, on the workers' consciousness. Thus, the LG reveals itself as based on functionalist and utility theoretical-methodological contribution to neoliberal management models, what Breilh (2006) calls "cosmetic" changes, because they leave insalubrious structures intact.

As workers' problems are considered as something external that must be solved out of the company's ambit, the attempt is to attenuate the quite often intense relations of the work environment through integration activities, avoiding emphasizing the contradictions inherent to such human relations. Corroborating this reflection, Mazzola (2003) concluded that the

LG represents a strategy to reduce the conflicts between capital and work, so that the employees can feel more “protected” and “favored” by the company.

Finally, one can say that in the way LG has been developed hegemonically, it rather represents a way of social stress accommodation; dissipation of the production process’ strong contradictions; labor act depolitization and demobilization of the labor union struggle; individualization of conquest through health and palliative compensation to the workers’ physical and psychic wearing. At last, the LG has also been identified as a compensatory gymnastics...but, compensatory to what, except for the health delivery to the productive process!?

Therefore, in case of interest to contribute to overcoming the idealized and standardized LG models, quite often offered as a low-cost activity and good effectiveness in health acquisition, it is necessary to seek basis in different knowledge fields, deepening studies about the labor universe (ALVES, 2005; ANTUNES, 2003; MÉSZÁROS, 2002); worker’s health (LACAZ, 2000; MINAYO-GOMEZ; THEDIM-COSTA, 2003); labor union system (ANTUNES, 2005; BOITO JÚNIOR, 1991; GIANNOTTI, 1991); life quality and physical activity (GONÇALVES; VILARTA, 2004) and physical education e collective health (FRAGA; WACHS, 2007).

From this standpoint, instead of establishing first the health needs and proposing to the banks’ directors a physical exercise program (labor gymnastics to combat sedentariness and compensate the wearings caused by repetitive and vigorous gestures), it becomes essential to value the collective

organization knowledge and from the dialog – careful and time-consuming – with the class organizations (at first lawful representatives of workers) in order to identify their main struggle agenda, even within the health sphere.

One of the CE categories, social reproduction<sup>4</sup> (CAMPAÑA, 1997), allows comprehending that: i) work is determinant in the health-disease process and, for that reason, it is important to investigate beyond what appearances point out and ii) within this context, people are not only exposed to risks to health, but are also subject to an extremely insalubrious process, mainly due to the accumulation of the financial system's powers and the insufficiency of collective defense mechanisms that oppose effectively to the physical and psychic wearings arising from exploration.

In the consolidation of a new possibility of Physical Education intervention, which exceeds the LG trends, it is desirable to identify the proponents as researchers of the labor universe, seeking to build their knowledge through the observation of different spaces and documents – such as work accident notices (“CAT”); the Internet pages and promotion publications on the banks’ and labor unions’ activities; newspapers and strike bulletins distributed at the category’s meetings; through interviews carried out with employees and labor union members.

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<sup>4</sup> Social reproduction is characterized by the way how human beings consume and work; by the social relations established by them; how they transform nature; by the distribution and exchange of socially produced goods; by institutions that produce and the consciousness and organization they reach.

In the labor union education field, works like Arruda's (1990) are important because they give instructions on the education that the working class is concerned about, consequently enabling to help in the reflection about which Physical Education political-pedagogical project corresponds to its needs. Thus, with a view to transforming the power relations established in the stress between capital and labor, this author recommends that education should be based on the whole human being, where the educator's responsibility is to help in the human will formation and its intention; and contribute so that he can theorize about his practice, helping him renounce the immediatist, activist and empirical view and acquire more and more the strategic and integral reality view.

Therefore, it is essential to stimulate the workers' participation in knowledge production, because knowledge mastering is a source of power, which collaborates to the social transformation project. Provided that the educators and their classes' interests are directed to the individuals' basic needs, it is important to consider their aspirations and potentials to know and act (BORDA, 1988). It is possible to help them identify their own problems in a critical manner and find feasible solutions to overcome them from the State, the financial institutions and the Labor Union collective organization and responsibility.

Finally, they are political-pedagogical conceptions that intend to make progress in the comprehension and adoption of a science committed with the transformation of the workers' life and health conditions. Evidently, all such effort does not represent an easy, let alone a sufficient task, provided that beyond the systematic study of counter-hegemonic knowledge in

the health field and the resulting abstractions for the Physical Education reality, the political stresses and the researchers' human and professional limits are also present, because the risk-factor logic is actually impregnated in our knowledge and everyday acts, being overcome only with maturity, permanent effort and the due support of investigators and resolutely democratic institutions.

### **Overcoming risks in the physical activity related to health**

**Abstract:** The risk factor's logic which prevails in the epidemiologic investigations from the health field has been reproduced in the Physical Education, especially in a trend hegemonic denominated Physical Activity related to Health. This work aims to present and to discuss the main historical landmarks and to detach effects from this paradigm in this knowledge field. In the end, a form of appropriation of the Critical Epidemiology will be presented with illustrations of overcoming attempt developed with workers from the banking sector.

**Keywords:** Physical Activity. Public Health. Risk Factors. Epidemiology.

### **Superando riesgos en la actividad física relacionada a la salud**



**Resumen:** La lógica de los factores de riesgo que predominan en las investigaciones epidemiológicas del campo de la Salud viene siendo reproducida en la Educación Física, específicamente en la tendencia hegemónica denominada Actividad Física relacionada a la Salud. En este trabajo el objetivo es presentar y discutir los principales marcos históricos y destacar efectos de este paradigma en esos campos del conocimiento. Al final, se presentará una forma de apropiación de la Epidemiología Crítica como ilustración del intento de superación junto a los trabajadores del sector bancario.

**Palabras-clave:** Actividad Física. Salud Pública. Factores de Riesgo. Epidemiología.

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