

Original article

## Prevention of occupational diseases and sustainable development: towards an interdisciplinary, humanistic, active and transformative approach



**Prevención de enfermedades profesionales y desarrollo sostenible: hacia un enfoque interdisciplinario, humanista, activo y transformador**

**Prevenção de doenças ocupacionais e desenvolvimento sustentável: rumo a uma abordagem interdisciplinar, humanista, ativa e transformadora**

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### ABSTRACT

The prevention of occupational diseases is part of government strategies aimed at sustainable development. It has a high significance for employers, workers and occupational health managers. This study deals with aspects related to the subject from a theoretical-methodological position that considers the current conditions of socioeconomic development in Cuba, with the objective of determining essential elements of an interdisciplinary, humanistic, active and transforming approach in the prevention of occupational diseases for sustainable development. From a dialectical-materialist

position, theoretical methods such as the historical-logical and systematization were applied during the research; among the empirical methods, document review and expert consultation were used. As part of the result, the current conditions of socioeconomic development in Cuba are specified, indicative of the need to define some theoretical-methodological criteria for the prevention of occupational diseases; aspects of prevention as a process are defined and the essential elements of the approach are determined from an interdisciplinary position. In conclusive terms, it is reported that the socioeconomic conditions, the theoretical sources, the integral parts or basic nuclei and the interdisciplinary relations that constitute essential elements of the humanistic, active and transforming approach in the prevention of occupational diseases were determined.

**Keywords:** interdisciplinarity; prevention; occupational diseases.

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## RESUMEN

La prevención de enfermedades profesionales se inserta en las estrategias gubernamentales, orientadas hacia el desarrollo sostenible. Tiene una elevada significación para empleadores, trabajadores y gestores de salud en el trabajo. En el presente estudio se tratan aspectos vinculados al tema desde un posicionamiento teórico-metodológico que considera las condiciones actuales del desarrollo socioeconómico en Cuba, con el objetivo de determinar elementos esenciales de un enfoque interdisciplinario, humanista, activo y transformador en la prevención de enfermedades profesionales para el desarrollo sostenible. Desde un posicionamiento dialéctico-materialista, se aplicaron durante la investigación métodos teóricos como el histórico-lógico y la sistematización, entre los empíricos se emplean la revisión de documentos y la consulta a expertos. Como parte del resultado, se precisan las condiciones actuales del desarrollo socioeconómico en Cuba, indicativas de la necesidad de significar algunos criterios teórico-metodológicos para la prevención de enfermedades profesionales; se definen aspectos de la prevención como proceso y se determinan, desde un posicionamiento interdisciplinario, los elementos esenciales del enfoque. En términos conclusivos, se informa que fueron determinadas las condiciones socioeconómicas, las fuentes teóricas, las partes integrantes o núcleos básicos y las relaciones interdisciplinarias que constituyen elementos esenciales del enfoque humanista, activo y transformador en la prevención de enfermedades profesionales.

**Palabras clave:** interdisciplinariedad; prevención; enfermedades profesionales.

## RESUMO

A prevenção de doenças ocupacionais faz parte das estratégias governamentais que visam o desenvolvimento sustentável. Ela tem um alto significado para empregadores, trabalhadores e gerentes de saúde ocupacional. Este estudo trata de aspectos relacionados ao tema a partir de uma posição teórico-metodológica que considera as condições atuais do desenvolvimento socioeconômico em Cuba, com o objetivo de determinar elementos essenciais de uma abordagem interdisciplinar, humanista, ativa e transformadora na prevenção de doenças ocupacionais para o desenvolvimento sustentável. A partir de uma posição dialético-materialista, métodos teóricos tais como histórico-lógico e sistematização foram aplicados durante a pesquisa, enquanto métodos empíricos incluíram revisão de documentos e consulta de especialistas. Como parte do resultado, são especificadas as condições atuais do desenvolvimento socioeconômico em Cuba, indicando a necessidade de definir alguns critérios teórico-metodológicos para a prevenção de doenças ocupacionais; são definidos aspectos da prevenção como um processo e os elementos essenciais da abordagem são determinados a partir de uma posição interdisciplinar. Em termos conclusivos, é relatado que foram determinadas as condições socioeconômicas, as fontes teóricas, as partes constituintes ou núcleos básicos e as relações interdisciplinares que constituem elementos essenciais da abordagem humanista, ativa e transformadora na prevenção de doenças ocupacionais.

**Palavras-chave:** interdisciplinaridade; prevenção; doenças ocupacionais.

## INTRODUCTION

Human health and well-being are an essential underpinning of sustainable development agendas. Hence, the main international organizations associated with the subject promote policies and strategies for disease prevention in all contexts, especially in the workplace. In this sense, there is a need to empower workers to participate from an active and transformative position in the sustained projection of preventive actions (ILO, 2015; WHO, 2022; UN, 2020).

The best known Cuban normative definition of sustainable development dates back to 1997:

A process of sustained and equitable improvement of the quality of life of the people, through which economic growth and social improvement are pursued, in a harmonious combination with environmental protection, so that the needs of current generations are satisfied, without jeopardizing the satisfaction of the needs of future generations (Asamblea Nacional del Poder Popular, 1997, p. 4).

Regardless of conceptual approaches, from this position, which considers current development needs and the commitment to future generations, without renouncing three essential pillars: 1) environmental protection, 2) social development and 3) economic growth, governmental and academic institutions in collaboration with social actors in Cuba have designed sustainable development strategies over the last five decades.

Among the 17 sustainable development goals, adopted by the United Nations (UN) for the period 2016-2030, linked to health, are: 3) "ensure healthy lives and promote well-being for all at all ages", as well as 8) "promote sustained, inclusive and sustainable economic growth, full and productive employment". Also 169 targets were foreseen, among them: 3.9) "substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution"; coupled with the need to 8.8) "protect labor rights and promote a safe and secure working environment for all workers". These global work projections have been severely affected by the complexity of the current epidemiological context generated by Covid-19; hence the need to redouble efforts linked to preventive health activity (UN, 2020, p. 5).

Since the beginning of the 2010s, Satizábal (2011, p. 1) has been warning, in relation to occupational diseases, that: the global trend shows an increase in work-related musculoskeletal disorders, a situation that leads to concentrate efforts on the prevention of this type of disorders through a comprehensive approach that understands their multi-causality and considers the wide range of risk factors associated with their occurrence.

The International Labor Organization (ILO) estimates that around 321 million work-related fatal accidents and 160 million new cases of occupational diseases occur annually worldwide (ILO, 2015). A study by López et al. (2021, p. 8) warns that in Cuba as well, occupational diseases "are on the rise".

In this sense, it is specified that the process of updating the Cuban economic-social model of socialist development generates a broad legislative movement, which introduces a set of changes and transformations in the forms of economic management and organization of work: increase of land usufructuaries, expansion of self-employment, establishment of small and medium-sized enterprises, strengthening of the cooperative sector, telework and telecommuting (de la Nuez Hernández, 2021; Díaz Machado et al., 2021).

The aforementioned conditions and the effects of population aging in Cuba, together with other factors, compel the search for ways and procedures to optimize the prevention of occupational diseases. These pathologies are foreseen in the Cuban legal system as: an alteration of health, pathologically defined, generated by reason of the work activity, in workers who are habitually exposed to factors that produce diseases and that are present in the work environment or in certain positions and that is recognized in the legislation in force (Asamblea Nacional del Poder Popular, 2013, p. 27).

Its prevention implies the integration of a set of measures, including organizational, hygienic-sanitary, ergonomic, educational and legal measures (González Betancourt, García Baró, & Hernández Fuentes, 2021). Incidentally, the Constitution of the Republic of Cuba establishes in Article 96 that "the State guarantees the right to safety and health at work through the adoption of appropriate measures for the prevention of accidents and occupational diseases" (Asamblea Nacional del Poder Popular, 2019, p. 5).

The systematization of previous studies, linked to the process of updating the Cuban economic-social model of socialist development, evidences a vast theoretical production that covers different areas of knowledge (de la Nuez Hernández, 2021; Díaz Machado et al., 2021; Torres Paez et al., 2018). Valuable works highlight legal, philosophical, political, economic, sociocultural aspects; however, there is a lack of research focused on health issues in the new or renewed labor contexts, under the current socioeconomic conditions. In particular, there is a lack of studies aimed at optimizing the process of prevention of occupational diseases for sustainable development (González Betancourt, García Baró, & Jiménez Sánchez, 2021b; López Espinosa et al., 2021; Medina Macías et al., 2020; Robaina Aguirre et al., 2020).

The consistency and significance of the subject is evidenced when considering essential aspects such as the employer capacity of subjects who manage non-state economic forms, the prevalence of

manufactured productions and the generation of work environments in which chemical, biological, physical and ergonomic risk factors, associated with occupational diseases, are identified (González Betancourt, García Baró, & Jiménez Sánchez, 2021b). Incidentally, García and Almeda (2021) conducted a study in which they report on the link between certain risk factors present in activities performed by self-employed workers and the most frequent diseases of the osteomyoarticular system.

The real capacity of employers and workers to identify and control risk factors must also be estimated, as well as the traditional problems and styles linked to the education and training of the subjects involved in occupational health management (González Betancourt, García Baró, & Hernández Fuentes, 2021). In addition, it is noted as a distinctive element that the new forms of non-state economic management still lack -unlike the state sector- a health and safety system, operated by professionals with vast experience, educated and trained for the fulfillment of their functions.

In this sense, the authors agree on the relevance of an approach in the prevention of occupational diseases, focused on human needs, which considers the active and transforming participation of all the subjects involved in the work activity, regardless of the place they occupy in the production or service process. Such purpose demands a projection from interdisciplinarity, understood as the effect of integrating several disciplines for the solution of complex problems, linked to the study and transformation of reality, from a collaborative and innovative work.

The instrumental value of an interdisciplinary, humanistic, active and transformative approach (IHAT approach) for the prevention of occupational diseases, has also a special significance for the subjects and territorial governmental structures linked to the design and implementation of:

"Public policies, strategies, programs and projects aimed at taking advantage of endogenous and exogenous resources, promoting economic, social, natural and political-institutional transformations in the localities on sustainable bases, with active and protagonist citizen participation, in function of raising the quality of life of the population" (Torres Paez et al., 2018, p. 7).

As has been noted, occupational safety and health constitute essential support for sustainable development, however, the literature review and the empirical results of the authors in preventive

activity show the need to optimize the prevention of occupational diseases in the current conditions of socioeconomic development in Cuba (González Betancourt, García Baró, & Jiménez Sánchez, 2021a, 2021b; López Espinosa et al., 2021).

In this sense, the present study exposes fundamental ideas, derived from the applied research project called: *Master's academic training for health professionals: interdisciplinarity, virtuality and quality management for sustainable development*, coordinated by the University of Medical Sciences of Havana, with the collaboration of other Cuban institutions. All this allows assuming, in a pertinent manner, in this work the objective of determining the essential elements of an IHAT approach in the prevention of occupational diseases for sustainable development.

## **MATERIALS AND METHODS**

In the research, predominantly qualitative, the materialistic dialectic was considered as the general method of knowledge, in an integration of methods that included in the theoretical order, the historical-logical and systematization; valid for the theoretical-methodological configuration of the structural elements of the IHAT approach. In the empirical order, the review of documents was used, mainly those contained in the legal framework for the prevention of occupational diseases in Cuba and the consultation of experts to assess the level of relevance in the determination of the essential elements of the IHAT approach in the prevention of occupational diseases for sustainable development.

The consultation with experts began with the presentation of a self-assessment questionnaire to a group of professionals, with the ideal preparation to provide assessments on the subject, in order to determine the coefficient of competence based on the calculation of the coefficients of knowledge and argumentation. Among the characteristics and qualities of the experts, the following were considered: years of experience, mastery of the research topic, work experience, analytical skills, effectiveness of their professional activity, postgraduate academic training and/or teaching category.

The self-assessment survey to determine the competence coefficient was applied to 21 professionals; of these, 17 were selected as experts. To process the criteria expressed by the experts, the Delphi Method was applied using the Staff statistical package. This made it possible to standardize the evaluation of each of the five proposed indicators.

The indicators stated in the questionnaires proposed to the experts are as follows:

1. Relevance and timeliness of the topic
2. Significance of the interdisciplinary nature of the IHAT approach
3. Theoretical-methodological value of the structural elements of the IHAT approach
4. Level of applicability and sustainability of the IHAT approach
5. Relevance of the IHAT approach to sustainable development

## RESULTS AND DISCUSSION

In correspondence with the proposed objective, the application of the system of methods made it possible to form a result, which will be reported from the following logic:

- Aspects related to the socioeconomic development of the country and the challenges of occupational disease prevention for sustainable development
- Aspects related to the structural elements of the IHAT approach in the prevention of occupational diseases for sustainable development, including analysis of practical creative activity, enriched from the experts' evaluative criteria

### **The country's socioeconomic development and the challenges of occupational disease prevention for sustainable development**

Cuban socioeconomic development, in the first third of the 21st century, blurs the framework of an eminently state-owned economy. As a result of a profound legislative movement, a complex mosaic of economic subjects is progressively configured in the country, integrated by traditional forms of state management, led by the socialist state enterprise and new forms of non-state economic management; constituted by self-employed workers, cooperatives, land usufructuaries, small farmers, small and medium enterprises, among others (PCC, 2017).

This reality demands a shift in occupational disease prevention strategies for sustainable development, from a positioning focused on the usual work entities, to the integration of new work environments, which are reproduced in homes, small workshops, mini-industries, distant plots of land, dissimilar construction areas, among other work environments.

The enactment in 2014 of Law No. 116 Labor Code generated the establishment of an updated legal framework for the prevention of occupational diseases, consisting of different legal provisions, including:

- Constitution of the Republic of Cuba, dated 19/4/19 (Article: 69)
- Law No. 116, Labor Code, dated 12/20/13 (Chapter XI)
- Decree No. 326; Labor Code Regulations, dated 12/6/14 (Chapter XI)
- Resolution No. 283 List of occupational diseases and the procedure for the prevention, analysis and control thereof in the national system, issued by the Ministry of Public Health dated 16/6/14
- Resolution No. 284 List of activities that due to their characteristics require the performance of pre-employment and periodic specialized medical examinations, issued by the Ministry of Public Health, on 16/6/14

The existence of a common legal framework for the prevention of occupational diseases in Cuba does not disfigure the distinctions established between the different economic subjects, with respect to the way of conceiving and implementing preventive actions (González Betancourt, García Baró, & Jiménez Sánchez, 2021a). State entities and the cooperative sector show notable differences in preventive management. In the former, the management of prevention actions is more participatory and specialized; there are professionals linked to Human Resources Management with high competence, who integrate an organizational structure with a wide network of support and coordination internally and at the inter-institutional level.

However, the agricultural cooperative sector, where important chemical, physical, biological and ergonomic risk factors are identified, is characterized by the implementation of a cooperative management model not specialized in occupational health and safety, which faces in preventive practice limitations related to the identification and control of risk factors (González Betancourt, García Baró, & Jiménez Sánchez, 2021b). It should also be considered in the projection of the prevention of occupational diseases in the agricultural cooperative sector that a good part of the members and workers have an independent performance in the activity they carry out as owners or usufructuaries of land, a condition that could generate uncontrolled risk situations. The same occurs with self-employed workers, who, due to the characteristics of their work, carry out their work

individually. Hence, it is evident the feasibility of training the worker for self-care and self-management of health at work, from a personalized and active projection.

In this context, Human Resources Management acquires special significance, associated with the design and implementation of true integrating strategies that reveal links between working conditions, training as an investment, shared values, employee participation and satisfaction, as well as occupational health and safety, to name just a few essential aspects, which support the prevention of occupational diseases in organizational environments from an IHAT approach.

This diverse and complex reality cannot ignore the transcendence of the right legitimized in article 69 of the Cuban constitutional text (Asamblea Nacional del Poder Popular, 2019, p. 5). When it is established that the State guarantees the right to safety and health at work through the adoption of appropriate measures for the prevention of occupational diseases, few notice that the worker is being empowered, who must move from a passive position in the preservation of their health, to an active and transformative performance in the management of health at work. Note that the aforementioned constitutional article establishes "the adoption of adequate measures for prevention", which is not only a mandate for the employer, but also for the worker himself. There is a clear need for the subjects involved in the work activity and the professionals who manage occupational health to go beyond the traditional ways of planning prevention and give greater prominence to the worker.

The essential difference between the traditional forms and the new challenges in the work environment, which require a different way of conceiving and implementing occupational disease prevention, lies in the complexity and diversity of the new established order. Its concrete expression is revealed in:

- The diversity of subjects linked to the new forms of economic management, in which a lack of specialized training in occupational safety and health, limited experience without direct precedents for prevention work and low risk perception, among other aspects, are identified
- Organizational determinations that generate particularities in the system of instituted values, due to the establishment of more individual forms of administration, production and economic distribution, as well as particularities in communication in correspondence with the values, interests, motivations and needs that guide the collective
- Unstable behaviors that produce worker fluctuations as a result of more informal procedures for worker entry, permanence and promotion. Repeated changes in the type of activity

performed by the worker and variations in the legal domicile or physical location of the work activity

- The specificities and conditions of the work activity, characterized by the prevalence of manufactured productions, through processes still insipient in their forms of organization of the occupational health and safety system. Together with the existence of work environments and activities in which chemical, biological, physical and ergonomic risk factors associated with occupational diseases are identified
- The complexity of the prevention process that demands rethinking the diagnosis, planning, execution and control of actions for the prevention of occupational diseases. As well as the search for superior forms for the negotiation and conclusion of labor agreements. In addition to a mastery of the current legislation on the subject and the conception of educational activities with theoretical-methodological support, from an interdisciplinary work that generates educational influences on health, legality, ergonomics, among other contents

In another order of analysis, the introduction of new forms of work organization that require less physical presence of employees in the work organization, such as teleworking and telecommuting, although they constitute a highly appreciable alternative - much more so in times of pandemic - represents a challenge in terms of prevention of occupational diseases. Incidentally, Medina Macías et al. (2020), considering the results of a study in Spain, warn that the main occupational risks associated with teleworking are ergonomic, psychosocial and isolation. These should be considered in the occupational risk prevention programs of the organizations that apply it, including training teleworkers in their proper control.

The aforementioned authors, at the conclusion of the research in which they discuss the advantages and challenges of teleworking, state:

The recent incorporation of this modality in the country requires the observation of its impact for organizations and teleworkers. It opens an interdisciplinary field of research, very fertile for social sciences, health, economics, among others. Let's get to work! (Medina Macias et al., 2020, p. 37)

## **Towards a humanistic, active and transformative approach to occupational disease prevention for sustainable development**

The following is the definition of three guiding ideas that constitute theoretical-methodological elaborations, which express essential qualities of an IHAT approach, which aims to contribute to the prevention of occupational diseases for sustainable development in the new conditions of the Cuban economic-social model, and also assumes as a goal, to promote the right to health at work, through the empowerment of workers. Its general characteristics are as follows:

- The IHAT approach implies a theoretical-methodological positioning of an interdisciplinary and anthropocentric nature, which favors the effective understanding, elaboration and implementation of each of the stages of the process of prevention of occupational diseases. It considers the real training needs of the subject in the work activity, his/her capacities for the introduction of positive transformations and individual responsibility for self-care and self-management of health. The IHAT approach does not diminish the responsibility of the State, health system institutions or employers in relation to compliance with the prevention measures that they are obliged to implement according to current legislation; on the contrary, it is a theoretical-methodological tool available to all to channel the prevention of occupational diseases from a social responsibility perspective
- The prevention of occupational diseases as an interdisciplinary process starts from considering the integrating nature of prevention, defined as an interdisciplinary axis, from articulating in each of its stages a set of knowledge generated by several scientific disciplines, among them: Hygiene, Epidemiology, Occupational Health, General Comprehensive Medicine, Medical Law, Ergonomics, Occupational Safety and Human Resources Management. It should be noted that it is not a juxtaposition of disciplines, but an integration that generates resolute syntheses, based on the problems identified in the effort to avoid, eliminate, minimize and/or control risk factors associated with occupational diseases
- The stages in the prevention of occupational diseases represent the highest level of concreteness in interdisciplinary relationships appropriate to the purpose. It considers that integration is a necessary condition and warns that interdisciplinarity in each stage is conceived with a specific purpose, based on a scientific, collaborative and flexible work in order to solve complex problems. Four fundamental stages are highlighted: Diagnosis (focused on the identification of risks and needs), Planning (aimed at the design and

coordination of actions), Execution (practical implementation of actions) and Evaluation (oriented towards the control and organization of the process)

The theoretical sources for the construction of the IHAT approach were determined in:

- Medicine, based on its humanistic character and the integration of scientific disciplines, which support the conformation of an occupational, hygienic, epidemiological, clinical, technical-laboratorial and legal criterion. This positioning responds to the consensus and legal framework established for the prevention of occupational diseases in Cuba. In particular, it recognizes the interdisciplinary dimension of General Comprehensive Medicine and its socio-community projection (González Betancourt, García Baró, & Jiménez Sánchez, 2021a)
- Medical Law as a scientific discipline, which has an ordering dimension in relation to the specialties of the medical sciences. In this sense, its scope is expressed through different normative bodies, which reveal close links with several branches of law, which codify the social relations in the individual, who provides or receives health services in a given context
- Ergonomics as a scientific discipline, which purpose is to adapt working conditions to people, in order to reduce the risks derived from it. It has points of contact with several professional fields, becoming an integrating discipline, which favors the prevention of occupational diseases

The constituent parts of the IHAT approach were determined on the basis of the following theoretical concepts:

- From General Comprehensive Medicine, the humanistic approach of this discipline, enriched with the systemic integration of knowledge, skills, values and relationship norms, which are expressed in a creative way in the modes of professional performance. This condition sustains the understanding and conduction of the health-disease process, from a humanistic, socio-community, ethical and collaborative projection. Its concreteness is also evidenced in the promotion of health, communication, respect for dignity, observance of human rights, concern for the common good, integral development of the personality, together with human and community improvement, including labor contexts (González Betancourt, García Baró, & Hernández Fuentes, 2021; González Betancourt, García Baró, & Jiménez Sánchez, 2021b)
- From Medical Law, the theoretical-conceptual approach of the right to health as an inalienable human right, which implies an understanding of the worker as an active entity in the process

of self-care and self-management of health. It reflects on the institutional, individual and collective dimension of the legal responsibility in the prevention of occupational diseases - as a concrete expression of the right to health at work - and from this reasoning, the obligation to comply with and enforce a set of measures for the benefit of individual and collective health (González Betancourt, García Baró, & Jiménez Sánchez, 2021a)

- From Ergonomics, the anthropocentric approach, which favors the transformation of the work environment, starting from considering the worker as the fundamental link in the man-work relationship. In this sense, the design of the characteristics of machines, equipment, instruments and forms of work organization are expected to correspond to the needs and potentialities of the individual and the collectives. This aspect is in line with the essence of participatory ergonomics, understood as a strategy to involve people in the planning and control of a significant part of their work, with sufficient knowledge and power to influence the processes and their results, with the aim of achieving desirable goals

The following figure represents the relationships established between each of the main scientific disciplines that contribute fundamental theoretical cores to the IHAT approach in the prevention of occupational diseases.



**Fig. 1-** Representation of the essential elements of the interdisciplinary, humanistic, active and transformative approach

Source: Own elaboration

The IHAT approach to occupational disease prevention promotes sustainable development by considering:

- An interdisciplinary dimension, conditioned by the complexity of the process of prevention of occupational diseases and the multiple resolution variables that increasingly require integrated knowledge and performance
- A humanistic dimension, which conceives the subject in the work activity, starting from "the functional capacities that allow the relationship life and not from the already established effects represented by the disease" (Almirall Hernandez, 2015, p. 3). Hence the feasibility of establishing working conditions based on human capabilities, an aspect that includes, according to a study conducted by the University of Dresden in Germany, cited by Almirall (2015): 1) considering the biological and psychological capabilities of man; 2) not producing diseases or impairment of personal efficiency; 3) promoting satisfaction and 4) favoring a harmonious development of the personality
- An active resignation, detached from the conceptions that consider the worker as a passive subject receiving care and object of protectionist measures to rethink a participatory, conscious and active positioning, which recognizes the responsibility of the worker and the labor collective with the adoption of measures that favor health at work. This criterion requires empowering the worker through training, based on an integration of occupational, ergonomic and legal knowledge, among others, which support the facilitation of self-care and self-management of health in the prevention of occupational diseases for sustainable development. It also highlights its proactive nature, since the diagnostic-resolution capacity of the labor collective enhances the early search for solutions, which are ahead of the establishment of complex problems, contributing to the sustainability of a healthy work environment
- A transformative dimension, which mobilizes endogenous and exogenous resources identified in the context of action of the new economic subjects, for the implementation of interdisciplinary strategies in the prevention of occupational diseases for sustainable development. Collaboration, intersectoriality and innovation are the pillars of the transforming projection of the IHAT approach. It is oriented not only towards the self-transformation of the subject (worker) through the education of the personality in interaction with the labor collective, but also towards the real transformation of work relations and, consequently, of labor scenarios. In this sense, high significance is attributed to the social responsibility of the

different individual and collective actors involved in the process of prevention of occupational diseases

The IHAT approach recognizes three fundamental categories for its practical implementation, which are defined below:

- Self-care in health: Constitutes a conscious expression of the right to health, which is concretized in human behavior for the benefit of individual and collective health. It demands, from a guiding, individualized, truthful and timely basis, the necessary information to raise the perception of risk and the self-modeling of the individual's behavior
- Self-management of occupational health: Designates the individual or collective performance to ensure the conditions that favor occupational health. It constitutes a conscious expression of the right to health, which implies a deployment of organizational, legal, health and training actions, directed towards the transformation of work scenarios into healthy environments, through the active participation of workers
- Facilitation of self-care and self-management of occupational health: This refers to the legal responsibility of the State, governmental structures, representatives of employing entities, companies specialized in occupational safety services, together with educational and health institutions, with the training and resolution of conflicts related to the prevention of occupational diseases

In preventive practice, facilitators of self-care and self-management of occupational health, including occupational health specialists, family physicians, union or administrative representatives, teachers, lawyers, to name but a few, must be trained to transmit information:

- Individualized, taking into account the information needs of the worker or work group, based on their working conditions, level of schooling, health history, risk factors, among other elements
- Truthful, because it pursues the veracity, efficacy and safety of the information provided. Unfounded advice, biased for cultural, religious, racial or any other type of discrimination reasons, is rejected. The truthfulness of the information also has an ethical-legal content
- Timely, referring to the correspondence -in time and form- of the information with the needs of the worker or labor group

Facilitators of self-care and self-management of occupational health not only favor the communicational processes that generate individualized, truthful and timely information for the active and transforming participation of workers in the prevention of occupational diseases; they must also promote higher levels of intervention of labor collectives through consultative, collaborative and decision-making actions.

Among the ways to enhance facilitation are the coordination of collective bargaining agreements, the training of occupational health promoters, the design of emulation programs, the implementation of occupational safety and health manuals, the adequate use of safety and protection means, together with the development of training and risk prevention plans. It is recommended to use as organizational forms in prevention activities: seminars, trainings, workshops, plenary sessions, forums, debates, health hearings, science and technology forums, round tables, workers' assemblies, among others.

High relevance is attributed to the use of digital technology as a communicational tool, facilitating the processes of self-care and self-management of occupational health for the prevention of occupational diseases, especially in contexts related to teleworking and telecommuting. Among the existing tools, the following are proposed: website, electronic newsletter, text messages, email, podcast, as well as the use of groups on Facebook, Twitter, Youtube, Instagram, WhatsApp, Todus and Picta.

In relation to previous studies, it is reported that the IHAT approach does not fit into the traditional classical models that make prevention levels correspond to the pre- and post-pathogenic periods. It also contrasts with the so-called "externalist prevention model", which attributes greater significance to the contracting of safety services to third parties and minimizes the active role of workers, thus promoting organizational immobilism (Mancheño Potenciano & Plaza Baonza, 2007, p. 89).

The IHAT approach in the prevention of occupational diseases goes beyond the scope of the holistic approach proposed by Satizábal (2011), which, although it goes beyond biomechanical positioning and considers the multicausal ethology of certain occupational diseases, continues to focus on the pathological dimension of the health-disease process. In this sense, the ergonomic approach is considered from the so-called dynamic paradigm, which main category is: the communication between the worker, his/her object and work environment, his/her work environment and with other workers and whose purpose is not only the prevention of occupational diseases, those associated

with work and the negative effects, but also to increase the quality of life of the worker (Almirall Hernández, 2015, p. 3).

Coherently with the previous positioning, following the criteria of Robaina Aguirre et al. (2020), it is reported that the conception of sustained prevention, based on the needs of the subject, linked to occupational health, has a high significance for the IHAT approach, because although it recognizes the pathological processes, it does not focus on the establishment of symptoms, signs or disease states, promoting the formation and implementation of highly proactive and sustainable preventive projects, aimed at the integral development of the personality in environments friendly to human needs. In this sense, a classification that admits three ways to conceive prevention is recognized: the medical one that includes mainly therapeutic or immunological procedures, the psychosocial one that considers the work with social agents in the community and the formative one. The latter, which in no way contradicts the first two, is based on an educational approach in three directions:

- spreading: It is oriented towards the dissemination of general elements (rules, actions, dates, prohibitions, sanctions, procedures)
- informative: It is directed towards the orderly transmission of information, based on the real needs of the subject (it models forms of behavior, establishes cause-effect, risk-benefit relationships)
- educational: It is directed towards the integral formation of the subject, based on a system of knowledge, skills, values and behavioral norms, which consider essential aspects of informative and informative character, according to the real needs of the individual

The use of one or another variant, as well as the establishment of integrating nodes between them, responds to the characteristics of the context, the needs identified and the interests pursued in a given prevention program. However, the authors of this study recommend considering -from an integrating criterion of medical and psychosocial aspects- the potential of formative prevention actions, aimed at the integral education of the worker for the prevention of occupational diseases, through self-care and self-management in health. In this sense, it is attributed remarkable significance to the pedagogical conceptions, which are the basis for the permanent education of the personality. It is specified, then, that the worker's education for the prevention of occupational diseases extends throughout his working life.

Table 1 (Results of the application of the expert consultation) represents an interpretation of the quantitative results, according to the levels of frequency with which the experts express their criteria by indicators, based on a rating scale of five options (*Very adequate, Fairly adequate, Adequate, Not very adequate and Not adequate*). The frequency of the results is expressed in natural numbers, accompanied by their percentage representation. It should be noted that Indicator 5: Relevance of the IHAT approach for sustainable development was rated by 9 of the experts consulted as Very adequate, 7 rated it as Fairly adequate and 1 as Adequate, which represents a positive evaluation.

**Table 1** - Results of the application of expert consultation

Indicators evaluated	Very suitable	Quite adequate	Suitable	Inadequate	Not suitable	Total experts
Indicator 1	9 (52,9%)	5 (29,4%)	3 (17,6%)	0 (0%)	0 (0%)	17
Indicator 2	10 (58,8%)	5 (29,4%)	2 (11,8%)	0 (0%)	0 (0%)	17
Indicator 3	9 (52,9%)	6 (35,3%)	2 (11,8%)	0 (0%)	0 (0%)	17
Indicator 4	6 (35,3%)	8 (47,1%)	3 (17,6%)	0 (0%)	0 (0%)	17
Indicator 5	9 (52,9%)	7 (41,2%)	1 (5,9%)	0 (0%)	0 (0%)	17

Source: Own elaboration based on the results collected

In the current Cuban socioeconomic scenario, it is identified the progressive conformation of a sector in the production of goods and services linked to the management of non-state economic forms; integrated by self-employed workers, cooperatives, land usufructuaries, small and medium enterprises. This reality requires a theoretical-methodological positioning in terms of prevention of occupational diseases, consistent with the new transformations, in order to ensure sustainable development, which requires a broad knowledge of the current legislation and greater capacity for the analysis of the health situation, coordination, negotiation, planning and implementation of intersectoral collaborative actions. This reality demands overcoming the traditional dialogue between

employers, workers and occupational health managers. Hence, the need to rethink some criteria that support the formation of a new approach.

The IHAT approach is oriented towards the prevention of occupational diseases for a sustainable development in the current conditions of the Cuban economic-social model; it considers the integration of scientific disciplines that support preventive work; it promotes the development of anthropocentric and participative preventive strategies to promote real changes in the new work environments. It also states ways and procedures to introduce improvements in the practical implementation of preventive actions.

A correspondence is identified between the structural elements of the IHAT approach and the goals set for sustainable development, aimed at ensuring healthy lives and promoting well-being for all, at all ages, as well as promoting sustained, inclusive and sustainable economic growth. There is also a correlation with the goals aimed at protecting labor rights and promoting a safe and secure working environment for all workers. In this sense, the IHAT approach, according to the results of the expert consultation, is relevant to the needs of the country's socioeconomic development.

The IHAT approach does not constitute an inflexible and finished theoretical product, but rather a theoretical and methodological positioning in development, which draws in particular on interdisciplinary research applied to occupational health for sustainable development.

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#### **Conflict of interest:**

Authors declare not to have any conflict of interest.

#### **Authors' contribution:**

*Evelyn González Betancourt and Yasser García Baró* designed the study, analyzed the data and prepared the draft.

*Evelyn González Betancourt, Lissette Jiménez Sánchez and Joaquín Aramís García Dihigo* were involved in data collection, analysis and interpretation.

All authors reviewed the writing of the manuscript and approve the version finally submitted.



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