SEVEN
publicações acadêmicas

Occupational health in the Colombian oil sector: an approach from the context of the working class

https://doi.org/10.56238/uniknowindevolp-107

Enrique Rodríguez Ortega
ECOPETROL, Refinería Cartagena, Cartagena de indias, Colombia. https://orcid.org/0000-0002-6664-3354

Tomas Estrada Rivadeneira
Fundación Universitaria Antonio de Arévalo (UNITECNAR), Cartagena de indias, Colombia. https://orcid.org/0000-0002-9936-591X

Diego Lindao Ruiz
Universidad Cooperativa de Colombia, Santa Marta, Colombia. https://orcid.org/0009-0004-9703-6356

Pedro Mendoza Miranda
Corporación Universitaria Rafel Núñez, Cartagena de indias, Colombia. https://orcid.org/0009-0002-7230-3935

Carlos Severiche Sierra
Corporación Universitaria Minuto de Dios - UNIMINUTO, Barranquilla, Colombia. https://orcid.org/0000-0001-7190-4849

ABSTRACT
Occupational health is the integral well-being of the person within their work environment. Occupational diseases are a costly phenomenon that causes a great impact not only in the company but also in the family and social environment. A review was made of the most recent research on the importance of Occupational Health in the Colombian Oil Sector: An Approach from the Context of the Working Class. The main objective of this review article is to qualitatively analyze the scientific literature (available in the databases, Scielo, Redalyc and official Web pages, using as search words: working class, oil industry, occupational health, industrial safety. Pertinent information related to the proposed objective was obtained, which is presented in 3 sections: The Oil Sector in Colombia, The Working Class: Occupational Health Context Workers' Health: Union Movement in The Oil Sector. In order to guarantee adequate control of diseases to which workers may be exposed. It is necessary to know the environmental conditions, physical, chemical, and biological contaminants, as well as ergonomic, psychosocial, and medical conditions, among others, of each worker in general and in particular. These same conditions are partly those that determine the life and health of the workers, that among other variables there is very little information for the workers of such conditions and above all the perception that the workers should have of their health derived from their environment. labor.

Keywords: working class, oil industry, occupational health, industrial safety

1 INTRODUCTION

The oil services sector provides the products, services and systems that allow companies in the oil sector (private, public and mixed) to develop the stages of the productive chain, from the exploration of reserves and construction of wells to the production and distribution of oil and gas (Ramírez & Anguiano, 2023). It is characterized by being different from any other sector, both in how it has written its history, and in the dynamics and practices of the companies that comprise it. Since its inception, oil has been used as a geopolitical weapon, and today it is the focus of controversies that

affect any aspect of the world economy, from inflation or interest rates, to monetary policies established by governments (Otálora, 2014).

For most of its history, crude oil has been used by investors as a defensive wild card against market fluctuations, but for a few years now, oil is no longer a physical asset, it is one more financial asset in the investment banking speculative portfolios (Selgas, 2020). At present, the oil sector is the thriving sector of the economy, therefore, every day they are more interested in being competitive, encouraging companies that provide goods and services to migrate towards representations and services that provide added value, representing a space of interest for the development of profitable projects following global market trends (González & Hernández, 2016).

In Colombia, this sector is the largest contributor to the economy of the country of Colombia. The industry has attracted foreign investment including Mobil, Esso, Texaco, Oxy, Shell, BP and others, from the main multinational energy companies that operate under the association of concession modes in the country. The industry in Colombia includes production companies, oil services, consulting companies, and support for a manufacturing sector with equipment, facilities, and materials (Mesa et al., 2018). Most of the Colombian oil industry is run through joint ventures between Ecopetrol and foreign companies, some of which have largely financed the construction of oil transportation pipelines, just as investment by these multinational companies has led to the creation of the oil infrastructure that exists today in the country (Guerrero-Useda, 2021).

However, according to Tamayo (2018), in what corresponds to the promotion and prevention of workers' health, it is through Law 100 of 1993 and Decree Law 1295 of 1994 that the General System of Professional Risks was created, which established a private insurance model for occupational risks and whose main objective was the creation and promotion of a culture of prevention of work accidents and occupational diseases. Before this law came into force, there was a system focused on repairing damages rather than prevention, so that emphasis was placed on medical care models (that is, diagnosis and treatment), disability pensions, and compensation, among others.

Medical care is usually subcontracted to health service provider institutions (IPS) which, together with health promoting entities (EPS) are, in some cases, business units of the same entity (Riaño-Casallas et al., 2016) In general, the Colombian state has made great efforts to implement strategies through the legal provisions consigned in the General System of Professional Risks (SGRP), to proactively protect workers against the risks of illnesses or accidents and at the same time prevent negative effects that can be generated by this type of event on the physical and mental health of workers (Ahumada et al., 2016).

Similarly, Colombian legislation has focused on offering guarantees for the medical and psychosocial care of those affected, for their prompt reinstatement to productive activities and avoiding exclusions or discrimination due to the consequences that this type of work-related events may

generate (Sirgo-Granda, 2016). However, it is still necessary to reinforce the requirement in compliance with the regulations, starting with affiliation to the system, which does not exceed 30% of the coverage of the economically active population, and to solve the false employment-protection dilemma against risks labor. Given that in Colombia the unemployment rate has remained around 12%5 in recent years, it is only natural that priority be given to creating and sustaining employment, rather than improving the quality of working life through better employment systems. control and protection of occupational risks (Mendoza & Flórez, 2014).

One of the sectors that has been most affected by occupational diseases and occupational accidents has been the working class in the oil industry or also called the working class, this is the one in charge of contributing to society the workforce for production, construction and manufacturing, receiving in exchange an economic compensation (Cruz, 2013), for this reason the objective of this work is to carry out a bibliographical review on occupational health in the Colombian oil sector from the working class perspective.

2 THE OIL SECTOR IN COLOMBIA

The petrochemical industry is extensive in physical capital and if we relate it to the pharmaceutical industry, it is also large in research and development. Plastics are one of the most dynamic subgroups, representing 60% of the industrial uses for which a petrochemical input is based (Odisio-Oliva, 2012). The other part of basic chemical production in Latin America is dominated by multinational companies that entered as developed markets during a major substitution of industrialization in the 1950s and 1970s in Latin America (Vargas, 2019).

It is clear the importance of analyzing the Colombian petrochemical industry, according to Gonzalez (2017), in order to characterize it, they justify this need based on three main reasons that we widely share, the first one assumes that like any developing country this is an industry where the Entry barriers may have played a significant role, particularly on an economic scale with high fixed costs and spending on proprietary technologies; as a second reason, they express that the advance was conditioned by an initial stage of introspective economic development, from the 50s to the end of the 80s. However, the recent orientation to export under economic franchise programs stimulated the establishment of plants.

For this reason, it is taken into account that the petrochemical industries are intertwined in what we call the petrochemical chain that introduces differentiating elements such as: the heterogeneity and diversity of productivity of the plant. On the other hand, technological complexity increases in the various maturity trajectories present in the links along the petrochemical tree (Yanez et al., 2022). The most representative lines of the petrochemical industry in Colombia are the manufacture of synthetic

resins, plastic materials and artificial fibers for the production of textile, rubber and plastic products (Odisio, 2018).

Similarly, the largest proportion of companies entering the sector were made up of small and medium-sized plants. with fluctuations, exceeded until 1994, when the reincorporation of new firms was noted. It is clear that as companies age, their probability of survival declines and the half-life of new ones increases, taking these close to seven years to achieve survival (González & Hernández, 2016). An important characteristic of survival is that small-sized plants have a greater probability of closing than large ones; the survival of medium-sized plants was higher than expected (Ciro & de Mendonça, 2020).

The petrochemical industry as a whole, according to Toro et al. (2015), tends to reduce the size of plants over a certain period, which gives companies greater flexibility for the restructuring of plants, it is also noted that productivity grew in a average rate of 4.9% per year, within incumbent start-ups productivity grew by 1.8%, while closed plants showed a negative rate -1.7% per year during the period 1975-1998.

3 THE WORKING CLASS: OCCUPATIONAL HEALTH CONTEXT

Contrary to accidents, where the breakdown of the health-balance is abrupt and very clear, occupational diseases mean a slower and more insidious destabilization of agent-host-environment relationships, caused by nature or working conditions, and contracted during the same. Although it constitutes a classic indicator in occupational health, the magnitude of the problem of occupational diseases in the Americas is not known (Jiménez, 2020). The difficulty of adequate knowledge of the epidemiology of occupational diseases depends, above all, on two groups of factors (Villa, 2021).

In the first group, are the factors related to the diagnosis. By their insidious nature, occupational diseases offer some degree of difficult to recognize, especially when early detection is desired. This difficulty is aggravated by the frequent specificity in signs and symptoms of most diseases, which results in masking or overlapping with diseases of non-occupational etiology (Rodríguez, 2019). When occupational diseases are suspected or recognized, there is often difficulty in diagnostic confirmation, especially if it depends on toxicology laboratories (Sanchez et al., 2018). In addition, there is great diversity among the lists of occupational diseases adopted in the different countries of the Region, and some are not up to date (Villalobos & Rada, 2021).

One of the main obstacles in this matter is the lack of criteria and standards to define occupational diseases, from the clinical, laboratory, other complementary, administrative, and legal point of view. Another no less important thing is the lack of knowledge on the part of the occupational doctors of the process, of the work area, where the patient - worker who evaluates develops; a large number of diseases and injuries that have not been confirmed as work-related, clarifying whether or

not to distinguish occupational hazards that cause them is a task for the occupational physician from the perspective of occupational epidemiology.

In this way it would be easy for him to determine positive and negative phenomena in the production process and implement actions to potentiate the former and minimize or eradicate the latter; managing to substantially improve safety and health conditions in the work environment (prevention, control or eradication). Fundamental the participation of the Ministry of Labor fulfilling its role of surveillance and control; It is necessary that its presence be more robust and active at the business level, understanding that man - productive process forms a reactive system in a very dynamic equilibrium and that its monitoring corresponds to various disciplines, therefore the Ministry of Labor is the governing body in the generation of legal and technical (preventive) regulations, must be present.

It is also worth noting the lack of greater knowledge and participation of workers regarding the risks to which they are exposed (Petit, 2020). Finally, it is necessary to recognize that, up to now, in medical training in the Region little emphasis has been placed on the relationship between work and health, such as, for example, in the teaching of occupational diseases. Consequently, most physicians are not familiar with them (Agila-Palacios et al., 2014).

The second group of factors relates to registration. In this regard, it can be noted that the notification of occupational diseases is not always mandatory; when it is, doctors are often unaware of proper procedures. Occupational doctors, employees of companies where diseases occur, frequently do not have sufficient guarantees to be able to comply with the mandatory notification (Cruz, 2013). Regarding the existing notification and registration systems, sometimes they are of little use for triggering the investigation, prevention and control actions typical of a dynamic and operational epidemiological surveillance system, so that this fact inhibits the practice of notification (Nava & Páez, 2013). Likewise, studies on the epidemiology of occupational diseases are lacking. However, there is information available that makes it possible to be certain about the seriousness of the problem of occupational diseases (Azabache & Pataca, 2022).

Therefore, as indicators of this problem in the Americas, some examples are mentioned below. Pneumoconiosis. The data corresponding to Bolivia indicate that, in 28,760 miner workers studied, the prevalence of silicosis reached the high rate of 22.1%, aggravated, very frequently, by tuberculosis (Narimisa et al., 2019). Likewise, a recent epidemiological study carried out in Brazil made it possible to estimate the current prevalence of silicosis in that country in about 30,000 cases. In the field of pneumoconiosis, mention should also be made of the growing risk of asbestosis, since the extraction of asbestos in some of the countries and the manufacture of asbestos products in others are growing sharply, partly due to the measures of control imposed in more developed areas (Gorotiza et al., 2018). The importance of the problem of occupational deafness lies in its high prevalence in most industrial branches, as well as in the fact that it produces permanent disability in a significant part of the exposed

workers, due to hearing loss (Contreras-Quevedo, 2015). Among the innumerable studies carried out in the Region, one of the most recent and important for its findings was carried out among metallurgical workers in greater São Paulo. The extrapolation of these data makes it possible to estimate a prevalence never imagined (Mora, 2017).

The participation of the workers with respect to the process of defense of occupational health constitutes a fundamental part of the labor actors, thus creating representations of the workers and generating means for the conquest of their rights and defense of these, in the face of deficiency and suffering that workers live in the issue of health at work in Colombia (Tovar et al., 2018) There are many problems that overwhelm the workers of the oil industry in Colombia, among them what worries the most is the issue of occupational health. In all these years, the participation of workers has been valued less by employers and even by governments themselves (Wilchez et al., 2018).

According to Cohen et al. (2020), this lack of attention or interest on the part of company administrators towards the workers they cause, increasing the deterioration of health due to:

- Intensification of the pace of work and increase in the intensity of hours.
- Deterioration of working conditions, increasing rates of occupational diseases, accidents at work, rates of absenteeism, rates of deaths at work.
- Obstruction in the organizational processes of the workers, such as trade unions, coexistence committees and joint health and safety committees at work.
- Precariousness of the living conditions of workers and their families through garbage contracts, for example.
- Lack of decent employment, and insurance due to weakness or absence in labor policies and laws with follow-up and control for employers on the issue of workers' health.

4 WORKERS' HEALTH: UNION MOVEMENT IN THE OIL SECTOR

A conflict arose in April 1938 that has been cataloged as the toughest defeat for the oil movement in the first two decades of its formation. In the words of Luna-García (2010), on February 10, 1938, a list of demands containing 12 points was presented to the Manager of the Troco, with an important weight of economic demands, although it also included the demand for compliance with social laws, as well as the construction of an additional hospital in Barrancabermeja. At the end of the term set by the workers for the study of the specifications, the Company kept hermetic silence. After a failed negotiation attempt, the workers decided to go on strike on April 8. The strike committee proposed holding a demonstration on April 12 at 9:30 p.m., which took place, but was dispersed by shooting at the defenseless crowd. The liberal government, which had remained silent, bathed the peaceful movement advanced by the oil tankers with blood. Shortly after, he hastened to present a settlement formula consisting of sending an investigative commission to the oil region to study the

"economic circumstances of the area," but he believed it convenient that the workers should return to work, if they agreed, since the work of the commission depended on normal conditions.

On the other hand, the participation of workers as a participatory action is fundamental and the main axis as a method of detecting occupational diseases and accidents in the different activities of the oil industry (Ariza et al., 2018). Where it is also rescued that participation is clearly constructive as a fundamental contribution to prevent before the different substandard conditions any type of complications in the health of workers, for this reason it must also be taken into account for all administrative decisions on the subject. safety and health at work (Navarro-Ortiz et al., 2018).

At present it is not easy to address this issue of occupational health for any sector or economic activity in the country, due to the present problems and the history of health in relation to work in which multiple weaknesses and points of improvement emerge. The great loser is the worker who is forced to intensify the struggle because health and its protection prevail with its requirements in assistance and economic benefits in the event of occupational accidents and illnesses (Barrera & Moreno, 2014). The occupational risk system (SGRL) in Colombia presents a series of scenarios and conditions that are not suitable for their purpose as perceived from the workers' point of view, with different health care itineraries subject not to the need of workers, but legal and financial breaches by appraisal entities such as the different interdisciplinary teams of companies, occupational risk administrators (ARL), health promoting companies (EPS), pension fund administrators (AFP), service provider institutions (IPS), regional disability qualification board (JRCI), and national disability qualification board (JNCI) (Portillo, 2013).

All this series of obstacles that the worker in the oil industry is required to go through in search of receiving due attention and monitoring of his illness, either so that he can finally successfully obtain health care for his rehabilitation, job reinstatement or relocation, or who must receive a disability pension, or receive compensation for loss of work capacity (PCL) (Espinoza-Banda, 2022). In such a way that the worker or worker in their disease state does not have to reach terms or judicial instances such as lawsuits, guardianships, among others, which intensify their stressful situation (Márquez et al., 2022).

The motivation of this research leads us to detect occupational diseases as a union model that allows us to follow up on the cases through the different experiences of these workers (Nájera-Guevara, 2022). Whose purpose is to guarantee the rights of workers, in addition to involving union organizations more in these scenarios through claims, complaints, mobilizations, stoppages, protests, strikes, sit-ins, marches and other legal collective mechanisms that unions have to the fight and confrontation before the violation of their rights (Parales et al., 2022).

In the case of workers in the oil industry in general, it is quite complicated since we can have very different situations regarding the right to health in Colombia and its political, sanitary, and epidemiological applications (Serrano-Besil, 2020). There are many shortcomings in both public and private institutions, since in general the health care situation in Colombia and its current model is not the best and hence its deficiency in the area of occupational health (Tovar, 2022).

It is noteworthy that the national policy for the protection of occupational hazards in Colombia is part of a state social security policy in Law 100 of 1993, which structured a model for contingency insurance for work accidents and occupational diseases (ATEP) in a services market scheme, which. It basically covers the formal sector of the economy and independent workers with the ability to pay, but leaves out the bulk of the working population in the informal economy, which is why it prevents them from effectively guaranteeing the right to health at work. in Colombia (Tijerina, 2018). By the year 2020 there is a population of workers in the oil industry that oscillates around 40,000 employees, and thanks to the new contracting models they move up and down through their different types of contracting (Navarro-Martínez, 2020).

Therefore, just as the contracting models are derived in the different companies, the different models for the provision of health services and professional risks are also obtained. In this context, we can highlight the depressing health care model specifically for the most vulnerable working population, which in this case represents 75% of contractor and subcontractor workers (Pérez et al., 2019). The empowerment of workers is a fundamental aspect for the defense of the right to protect their health in the world of work and to improve their quality of life and that of their family (Contreras-Quevedo, 2015). One of the main functions of the workers should be to protect their health and that of their co-workers, where their participation is necessary for this purpose, being this an active part of the safety and health processes at work, strengthening thus, healthy behaviors and environments at all levels of the company, and influence decisions that affect their health and safety and that of their co-workers (Feldman & Blanco, 2012).

According to Moya-Garcia (2016), the participation of the workers is important because:

- The workers will communicate to the employers their suggestions, needs and priorities before the threats of endangering their health in the different work activities.
- Workers should participate in all processes of hazard identification, risk landscape analysis, execution, evaluation and monitoring of critical tasks of activities that generate or may cause damage to the health of all workers.
- With the participation of the workers, a voice of alert is guaranteed before any unsafe condition that could cause harm or discomfort to the workers.

Why is worker participation necessary?

- Through the participation of the workers, it is possible to obtain information at the source of the possible scenarios where the health of the workers is endangered.
- The workers, through their own experiences, are the main contributors to the deviations of the different procedures to detect occupational diseases.
- The workers themselves can contribute to reduce the accident rate and sick workers, visualizing the unsafe conditions that occur in each of the work sites and strengthening their working conditions in order to maintain better occupational health.

5 CONCLUSIONS

Within the conclusions we must take into account the high exposure to chemicals used in the oil industry, the hospital problems that the country experiences in terms of care and monitoring of accidents and occupational diseases. The application of the occupational epidemiology in the clarification of the dangers in the productive process, on the part of the occupational doctors. A more robust participation of the Ministry of Labor exercising surveillance and control. The little participation of workers in occupational issues: Investigations of accidents and incidents as well as occupational diseases. Finally, as an initiative of interest to promote the creation of an observatory for accidents and occupational diseases from the point of view of the workers.

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