The importance of communication for the maintenance of health and safety in work operations in ports

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Abstract
Introduction: The work of transport and handling of goods at the port is collectively executed and so it requires good communication among workers to deal with the usual and unexpected situations of daily work.

Objective: The aim of this study was to analyze the form and functions used in the communication between port workers and determine their importance for the preservation of workers’ health and safety.

Methodology: This research is the result of a case study conducted in a port located in the north of Portugal. It involved general and systematic observations of work activity on the pier and boats, completed with semi-structured interviews and individual and collective refunds. Individual and collective refunds served to deepen some aspects identified during observations, fundamental to the knowledge of subjective experiences of these workers.

Results and discussion: During the investigation each port worker was observed not as an isolated individual but inserted into working relations with other port workers, who perform other functions, such as boarding, stevedores, inspectors, crane operators, among others. These interactions among workers take place through various forms of communication: gestures, movements, looks, facial expressions, verbal or printed information, operative codes.

Conclusions: The impact of these forms of communication is visible at several levels: the possibility of meeting deadlines; the quality of their work; and also for the safety of all those involved in work situations. There are variations in communication not only according to the type of load to be carried, but also according to the function of each team member.

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1. Introduction
1.1. Port labor and its interfaces with safety communications

The work of loading and unloading merchant ships dates to the ancient times for water transport was the first to be used commercially by humanity (Medeiros et al., 2000). In the huge context of port operations and complex logistic system with its variety in operations, in port layout, in meteorological and labor conditions, the bio mechanical factors and the operational behavior of workers (D’Elia and Silva, 2014), the port worker performs his duties in a dangerous and, many times unhealthy environment, and the risks increase in relation to the load being moved, exposing workers health to permanent danger. (Soares et al., 2008).

“Work safety and health would, therefore, be defined as the acknowledgement of the risks in different environmental conditions in the workplace, continuous follow-up of port work, seeking quality and promoting the life of the worker involved”.

(Silva, 2011, p.26.)

The strong ties built in port work sustain a quite peculiar culture. In such, both spoken and body language are important components in the maintenance of health and work safety. In various situations, the workers signal the importance of communication to guarantee work safety, which is in their own hands, sustained by emotional ties. (Queiroz et al., 2012). Even the dock workers emphasize the need for team effort to conduct an activity recognized as collective work, which requires confidence in partners as teammates and security as the technical ability of each one in the activity performed (Machin et al., 2009). The main form of social interaction in this collective activity is by cooperation, a consensual adjustment of the organization as directed. For this, those...
who strive to work together as a team need to reorganize the division of labor and human resources by creating practical rules, accepted and respected by all (Dejours, 2013).

On the other hand, regulations and controls established to prevent the free interpersonal communication is a hindrance perceived as a major limitation to freedom in the workplace (Seligmann-Silva, 1994).

Dalbello-Araujo (2001), in a study with port workers, found that the forms of gestural communication and mutual aid were essential to prevent many accidents from occurring while performing the work. Queiroz et al. (2012) report that both oral and body language are important components of maintaining health and safety at work. Likewise, Vieira et al. (2014) show that the lack of communication skills among individuals involved in air operations contributes to most accidents and incidents in aviation.

Dock workers develop nonverbal signal recognition skills and learn how body language helps avoid interpersonal conflicts and accidents or incidents. However, a late message, misinterpreted or missed, can lead to catastrophic results. Thus, it is important that professionals exposed to risk situations be well trained in their skills in the various forms of communications.

1.2. The role of communication in work management and accident prevention

Safety management in organizations may include general policies, systems of formal procedures and work practices related to the promotion of safety in the workplace. Safety communication is an example of specific practice. In a highly positive safety atmosphere, the level of involvement and motivation of operators often exceeds expectations and safety behavior will lead to positive results (Griffin and Curcuruto, 2016).

According to Hofmann and Setzer (1998), safety communication measures the relationship between safety, environment and attributes regarding the causes of organizational accidents. In this sense, individual safety perceptions have an effect on the organizational safety environment and the opposite also happens, safety behavior influences the safety environment in organizations (Tholén et al., 2013). Individual psychological perceptions about employee safety environment have a significant impact on their behavior and injuries (Huang et al., 2017). In addition, Cochie (2013) considers that internal states are precursors of individual effort and safety behavior. Understanding what motivates operators to work safely is crucial to reducing unsafe behavior and increasing worker participation in occupational safety activities.

In Brazil a new approach has been developed, with the participation of the government, workers and business people, for the promotion of health and safety in port work, this document is called Regulating Norm number 29 – Safety and Health in Port Work, or simply NR-29 (Silva, 2011).

Therefore, the aim of this research was to analyze the form and functions used in communication among port workers and determine their importance in the preservation of the operators’ health and safety.

2. Methodology

The study is characterized as a case study and ran from January to September 2014. The empirical research was conducted in a public port located in the north of Portugal, which moves 16 million tons of goods per year, representing 25% of Portuguese Foreign Trade by sea. The main types of cargo transported, observed during the research included: wood chips, scrap glass bran, wind pieces verguinha, metal rollers, stone, wheat flour, containers and vehicles.

Consent for the research was obtained from the private company responsible for the labor management of the designated port workers, which provides services to the container terminal and general load terminal.

Participating in the research were hired port workers, contractors and temporary workers, such as the following: engineer, lecturer, stevedore, gantry worker/crane operator, ground worker, gangway. Almost every workday, they are designated different jobs, so they can be considered multifunctional workers. Work teams are variable in regard to the number of workers (between 8 and 11 members) and there may be several teams working simultaneously, depending on the amount of ship holds and loads to be moved.

There were general and systematic observations of collective work and the different forms of communication in the pier area and boats. The study was complemented with semi-structured interviews (conducted immediately after the observation period) and four individual and two collective returns (one for the company’s management and the union and another for workers).

Initially, general observations were made on the work situation, which contributed to the composing of an interview script (Appendix). Subsequently, the observations were systematic and the activities of all the members of the team were observed, being recorded on a specific spreadsheet about the actions every 10 min, for at least 1 h at each visit. Whenever possible, attempts were made to resolve doubts while the observations were underway.

After the observation period, semi-structured interviews were applied, and the interviewees were chosen randomly, among those who agreed to be interviewed in the dock area. The questions were about the characteristics of port work, construction of work teams, cooperation between members of the group and system of communication between operators.

In total, 25 visits to the research site were carried out, 6 of which included meetings, interviews with the occupational physician, training by the Port’s Public Administrator and 19 observations of the work system, resulting in 40 h of observations to 8 different types of loads, 30 semi-structured interviews, 4 individual refunds and 2 collective refunds (Table 1).

The data collected were, subsequently, reorganized on a table where they were marked for each observation, the moments when communication occurred among different operators, the operators between which communication happened, the way communication was established and the role this communication took on.

Individual refunds occurred at the union in a reserved room and allowed doubts to be clarified about the data collected and the researchers’ impressions to be confirmed. Each individual interview lasted 30–40 min. In the final stage of the research, the collective refunds served not only to present the results of the study to the workers and management, but also to endorse the data found by the researchers.

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