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INDICATORS OF WORKING CONDITIONS: PERCEPTION OF SOCIAL ACTORS

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Abstract: There are several types of performance measurement indicators for different company interests such as quality indicators, financial indicators, among others. However, the performance measurement aimed at working conditions is a subject little studied and treated in the literature. This study considers working conditions as a junction of all the physical, organizational or social and psychological or cognitive conditions to which the operators are subject in their work situation and that, as a consequence, affect their health. Based on this definition, this study aimed to identify the perception of different social actors in relation to indicators of working conditions, through a case study in a company, where 3 groups of professionals were selected, different in relation to their performance in the area of occupational health and safety: CIPA (Internal Commission for the Prevention of Accidents), SESMT (Specialized Service in Occupational Safety and Medicine) and operators (workers in general, chosen at random). A total of 70 interviews were carried out with the application of a questionnaire based on the Ergonomic Workplace Analysis (EWA) tool, which sought the opinion of the interviewees in relation to six thematic categories, such as: what factors the participants think influence health at work, what their knowledge about indicators, what worker health programs they know within the company, what participations in the working

conditions they think they have, if they do some kind of analysis of the work of colleagues and what indicators of working conditions they know. The results obtained after the analysis of the data showed the evidence of the work safety in the perception of the groups in relation to their participation in the working conditions, the relevant aspects in the analysis of the work and the indicators used to measure the working conditions. This finding can be justified by the history of Brazilian legislation that involves norms and laws in the area of occupational safety. In these categories of analysis, all the most cited items are related to operator safety (such as the use of PPE), identification of risks in the area, numbers of accidents with and without absence, frequency rate and severity of accidents. The importance of analyzing and controlling indicators related to work-related accidents is known, but nowadays, withdrawals are no longer caused solely by accidents, but by work-related diseases, which may highlight the importance of other indicators work conditions. The CIPA and SESMT groups observe the prescribed tasks and norms and how much the activity of the operators distances them, different from the operators that showed commitment in the subjects related to working conditions, since it was the only group in which the participants quoted to observe the positions of job; participate in the ideas program; observe the working conditions and try to solve the problems identified in the workplace.

Keywords: indicators; work conditions; ergonomics.

1. INTRODUCTION

The need for companies to survive in an increasingly competitive market leads them to seek a greater understanding of the cause and effect relationships of their actions and signals that generate profitability, requiring information that guides them about their competitive performance (NOVOCHADLO, 2006).

There are different types of indicators for measuring performance for different company interests: financial, productive, qualitative, efficiency, strategy, capacity and

sustainability (LEITE et al., 2011; MORAES & ANDRADE, 2011;

SANTOS et al., 2012). However, performance measurement focused on working conditions is a subject little studied and treated in the literature. The demands arising from work, along with those originating outside it, generate strain on workers' health, and negative health and well-being indices can harm both workers and the company, such as decreased productivity, absenteeism and reduced resources for organization (DANNA & GRIFFIN, 1999).

Figure 1. Workplace Health and Wellbeing Scheme.



Source: Adapted from DANNA & GRIFFIN, 1999.

According to Abrahão et al. (2009), working conditions are understood as being constituted by the physical facilities and materials available in the environment that makes up the work scenario, such as equipment, instruments, furniture, lighting, temperature, exposure to noise or gases, among others. These factors are constantly interacting and can make work easier or more difficult.

The present study considers working conditions as a combination of all physical, organizational or social and psychological or cognitive conditions to which operators are subject in their work situation and which, consequently, affect their health.

The importance of studying men in their work environment is understood by Guerin et al. (2001), in the operator's relationship with his means of work. On the one hand, an objective centered on organizations and their performance, which can be understood from different aspects: efficiency, productivity, reliability, quality, durability, etc. On

the other hand, a people-centered objective, this is also unfolding into different dimensions: safety, health, comfort, ease of use, satisfaction, work interest, pleasure, etc. (FALZON, 2007).

The Epidemiological Technical Nexus (NTEP) breaks the paradigm of the individual technical nexus between the worker and the health problem by bringing to the core of the investigation the figure of the work environment as a determining or conditioning element of the process that now becomes the technical nexus: environment \square health \square illness. In this way, the epidemiological aspect is added to the technical nexus (OLIVEIRA, 2008).

When analyzing, in practice, the use of indicators established by legislation, Lahoz & Camarotto (2012) carried out a study on performance indicators in work activities, where absenteeism was identified as the only indicator common to the companies studied. The authors concluded that, although these indicators are found in the literature, there is no consensus on how they should be interpreted from the point of view of the company, workers and their unions, health services and public and private pension services.

The objective of this study was to identify the perception of different social actors in relation to indicators of working conditions and health at work.

2. METHODS AND TECHNIQUES

- A case study was carried out in a company, in which 3 groups of different professionals were selected in relation to their work in the area of occupational health and safety. 70 interviews were carried out with the following groups of people:
 - CIPA participants: representatives of the employer and employees whose complementary activity is the observance of working conditions in relation to health and safety;
 - SESMT professionals: professionals who are also responsible for observing and maintaining working conditions in relation to health and safety;
 - Operators: this group was selected at random, made up of people who did not have specific training related to the topic “health indicators and working conditions”, however their central objective of production is work activity.

CIPA participants correspond to approximately 15% of the company's total employees; the

operators, 20% and the SESMT, divided into two parts: one part made up of doctors and nurses - 3%, and the other part made up of safety technicians and engineers - 7%. For data analysis, the SESMT was divided into health and safety positions, because it was observed that in some items, these groups present divergent answers from each other.

The questionnaire applied in the interview with the groups was prepared based on the Ergonomic Workplace Analysis (EWA) tool (CAMAROTTO et al., 2001), consisting of the following thematic categories:

- I. Factors that influence Health at Work: which factors social actors believed influenced health at work, such as pace, hours worked, work position, postures adopted.
- II. Knowledge about Indicators: among some indicators presented, which ones they knew and knew the definition.
- III. Occupational Health Programs: which programs related to worker health were the respondents aware of.
- IV. Participation in Working Conditions: what the interviewees considered their participation in working conditions would be like.
- V. Work Analysis: the possibility for participants to dedicate themselves to analyzing the work of their colleagues and which aspects to consider in this observation.

SAW. Working Conditions Indicators:

which indicators would interviewees mention to indicate working conditions.

All participants signed the Free and Informed Consent Form (TCLE), agreeing to voluntarily participate in the study, which was approved by the Research Ethics Committee of the Federal University of São Carlos (CEP-UFSCar), in accordance with Opinion no. . 166,884.

3. DATA ANALYSIS

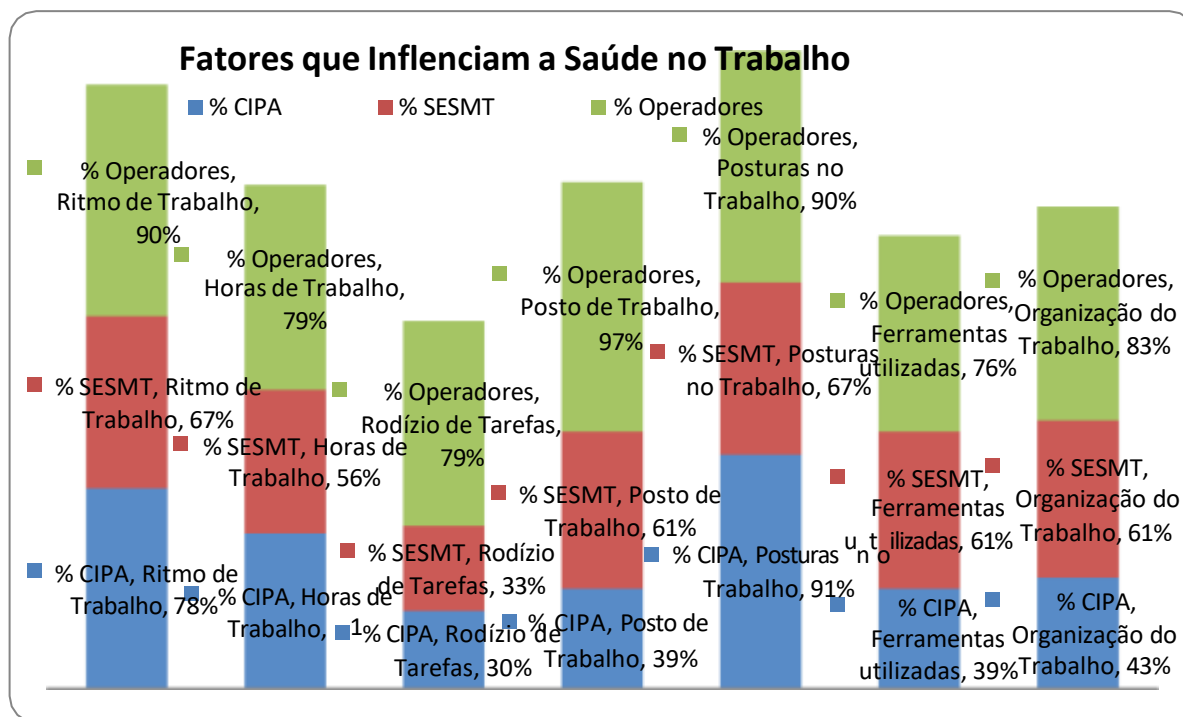
Data analysis was carried out qualitatively at the time the responses were analyzed, but it was also used a simple quantitative analysis (descriptive statistical treatment), using percentages to compare the answers given by the participants.

Of the variables worked on, there are legal variables or factors (from legislation, such as work accidents, frequency rate and severity of accidents) and variables that are part of the work activity, used to complement the health factors considered in the legislation.

3.1. Factors that Influence Health at Work

In this category, some factors that influence health at work were presented and the interviewees reported which ones they believed influenced health. The figure below presents a graph with the participants' responses.

Figure 2. Percentage of responses from the groups that participated in the research regarding the facts that they consider to influence health at work.



Source: Prepared by the author.

According to the graph, it can be seen that the Posture factor, followed by Rhythm, were the most cited as influencing health at work. The least mentioned was the Task Rotation. Regarding this “Rotation” factor, 62% of people who think it influences health say that this influence is positive, since rotation allows the operator not to spend too much time in the same activity and posture. However, 8% argue that this influence is negative, as the fact that the operator has to change activities or operations can cause stress, as he may not like other activities or these other activities may require greater effort than the others. The remainder, 19%, think that this influence can be both positive and negative.

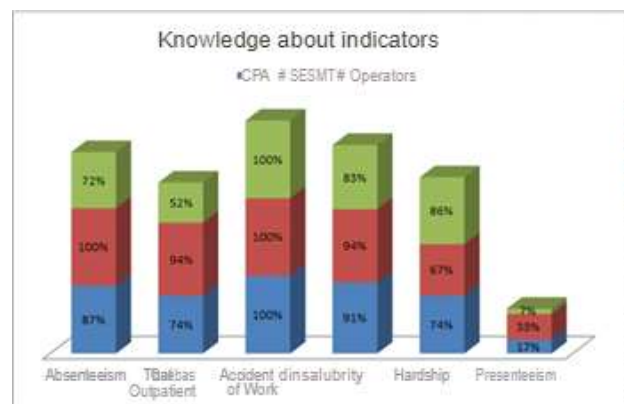
When observing the percentages of each group, it is clear that the SESMT and CIPA groups obtained lower percentages than the operators and one explanation for this would be that these groups focus their attention on the task, and not on the activity. Operators were the group with the highest percentages, which can be explained by the fact that they are they who carry out the activity, who are directly related to it and

the work environment.

3.2. Knowledge about Indicators

In this item, 6 indicators related to working conditions were mentioned, 2 of which are from legislation (Workplace Accidents and Unhealthy Conditions), 1 is still in the process of being added to legislation (Harshness) and 3 are managerial or organizational (Absenteeism, Outpatient Complaints and Presenteeism).

Figure 3. Percentage of groups' response regarding knowledge about the indicators presented.



Prepared by the author.

The indicator cited by 100% of those interviewed was work accidents. This can be explained both by the programs and services required by Brazilian legislation for companies, such as PPRA and CIPA, and also by company policy, such as the implementation of a program aimed at observing and analyzing accidents and incidents at work. This program is carried out by people, called observers, trained to observe attitudes that result in risk situations. The objective of this program is to reduce the number of incidents (work accidents and occurrence records) by improving a group safety culture.

3.3. Occupational Health Programs

In this category, interviewees were asked which programs related to workers' health they were aware of. Of the responses, 35 programs were cited by

70 interviewed. It is important to highlight that they were called programs, but they can also be services or events organized by the company.

The following table presents the 7 programs out of the 35 most cited by the groups that participated in the research.

Table 1. Workers' health programs mentioned by the groups participating in the research.

Most cited programs	CIPA	SESMT	Operators	Total (Absolut)
Anti-smoking Program	15	8	5	28
Ergonomics	3	8	15	26
Food Campaign	11	9	2	22
SIPAT (Internal Prevention Week of Accidents)	8	3	6	17

PCMSO (Occupational Medicine and Safety Control Program)	3	12	1	16
PPRA (Environmental Risk Prevention Program)	4	9	2	15
Hearing Conservation Program	3	10	1	14

Prepared by the author.

Among the most cited programs, some are organizational programs, that is, programs developed by the company itself that generally aim at the well-being of employees and seek to promote relaxation events, associated with healthy purposes. They are: anti-smoking program, food campaign, SIPAT and PCMSO.

Other programs mentioned are related to the concern and control of legal indicators, such as those mentioned previously (unhealthiness, work accidents and hardship). These programs are: ergonomics (related to harshness), PPRA (related to work accidents), hearing conservation program (related to unhealthy conditions), occupational safety program (related to work accidents and dangerousness), respiratory protection program (unhealthiness).

Ergonomics was a program cited by around 18% of those interviewed, mainly by operators, as the company has invested in projects and kaizens focused on this area. Furthermore, there is a company program

that allows employees to register their ideas in a program, requiring that for these ideas to be approved, they have ergonomic, financial and safety gains. If approved, employees receive prizes, that is, this program encourages employees to share their ideas to improve all work in the company, also thinking about ergonomics.

The SESMT cited two main programs, the one of which it is part, PCMSO (mainly cited by medical area) and the PCO, cited mainly by the security area. However, other programs related to safety, such as the occupational safety program and SIPAT, were rarely mentioned by this group. The same happened with the CIPA group, which cited in greater numbers anti-smoking programs, food campaigns and chemical dependency, rather than programs related to safety, such as PPRA, PPR, PCA and SIPAT, a week organized by CIPA itself.

3.4. Participation in Working Conditions

When asked how people think their participation in improving working conditions is, around 30 forms of participation were mentioned. Of these 30, 13 were linked to occupational safety, such as identifying, evaluating and controlling risks or accidents, monitoring

the use of protective equipment individual; 5 were related to participation in company programs or projects, such as kaizens (to observe gains, including ergonomics), ergonomics projects, lectures and training, participation in good ideas programs (most of the ideas suggested by operators aim to ergonomic gains and improvements in carrying out tasks), health programs (debates such as PCA, PRA, among others); 4 were more related to ergonomics, such as raising problems at the workplace, observing working conditions and trying to solve the problems. The rest of the answers were more generic, for example, looking for improvement solutions, seeing day-to-day needs, etc.

The table below presents the forms of participation most cited by respondents.

Table 2. Forms of participation of the interviewed groups in working conditions.

Participation in Working Conditions	CIPA	SESMT	Operators	Total (Absolut)
Identify occupational risks	8	7	5	20
Work with employees in awareness	7	5	4	16
Working with accident prevention	6	5	0	11
Search for improvement solutions	3	6	0	9
Participation in Management Programs such as kaizens	0	1	6	7
Giving ideas for the program	0	0	7	7
Observe the working conditions in the area and try to resolve problems	0	0	7	7
Do little to improve conditions work	3	3	0	6

Prepared by the author.

The answer “To act very little” is among the most cited, including by cipeiros, who complain about not being heard by the company and SESMT. The cipeiros who responded in this way state that they are not always listened to, both by other companions, who do not listen when they ask to use certain PPE, and by the organization, when they request a certain improvement. The majority of SESMT members report that there is no integration between participants, which can explain the low index indicated by them in the item “relationship”, in question one.

On the other hand, no operator cited very little action in improving working conditions, on the contrary, they are the ones who do the most (and the only ones) who participate in Ergonomics projects; the only ones who mentioned observing the jobs, participating in the ideas program, observing working conditions and trying to solve the problems identified.

3.5. Job Analysis

The first question related to work analysis was to investigate whether interviewees observe

their colleagues working and, according to the results, the majority of respondents - 66% - said yes. This above-average number of people responding that they take the time to observe other people's work may again be the result of the company's program aimed at observing and analyzing accidents and incidents at work, which trains people to be “observers”, term used by the program itself. In addition to this program, it should be remembered that CIPA members are trained to always be aware of health and safety aspects in the area, that is, to observe people and the work environment.

Of the total who responded by observing the work of other employees in their area, they were asked which aspect(s) they considered most important when analyzing a work activity. You

Aspects related to people's safety were the most cited, being the item most cited by CIPA and operators. However, SESMT did not mention this item, which is surprising that no security technician or engineer mentioned it. This group cited personal factors and job position as the most relevant aspects of analyzing work activity. Personal factors correspond to intrapersonal aspects such as the individual's knowledge and experience. The job position, as in the first item discussed in these results, is a factor that this group considers to influence working conditions, consequently, they consider it a relevant aspect to be analyzed at work.

The following table shows which aspects of the work activity were most mentioned by the interviewees.

Table 3. Most relevant aspects of work activity according to the opinion of the groups that participated in the research.

Relevant Aspects of Work Activity	CIPA	SESMT	Operators	Total (Absoluts)
Safety of the operator and colleagues (use of PPE)	11	0	15	26
Posture	7	4	14	25
Personal factors: knowledge, behavior, health	6	7	5	18
Workstation	7	7	3	17
Accident Risk	6	4	0	10
Tools	2	0	6	8

Prepared by the author.

3.6. Working Condition Indicators

This category involves questions that unite the themes introduced in the previous questions: indicators and working conditions and their perceptions by the groups interviewed. The first question refers to which indicators of working conditions the operators knew or had contact with in their daily lives, at company meetings. A total of 40 indicators were cited, including:

- - 23 were related to Security;
 - - 10 related to Health
 - - 3 related to the Environment;
 - - 3 related to Production
- The table below presents the first 10 of the 40 indicators most cited by research participants.

Table 4. Working Conditions Indicators cited by the groups participating in the research.

CIPA Condition Indicators	SESMT	Operators	Total	
Work			(Absolut)	
Number of lost-time accidents	10	2	4	16
Number of Accidents without Lost Time	10	2	4	16
Accident Frequency Rate	9	6	0	15
Accident Severity Rate	9	6	0	15
Absenteeism	2	2	7	11
Number of Accidents	0	4	7	11
Area Hazards and Risks Spreadsheet	0	0	10	10
Number of Accident-Free Days	3	0	6	9
Number of Accidents/Area	5	2	0	7
They don't exist/ I don't know	0	3	3	6

Prepared by the author.

Analyzing the first five most cited indicators, it is observed that only one of them is a health indicator, absenteeism; the other 4 are indicators of work accidents. Both overall and separately in each group, safety indicators were the most cited.

Absenteeism, as previously mentioned, is analyzed because supervisors are charged with the number of hours worked per worker.

Absenteeism directly affects this indicator, which is why they are concerned about the number of absences and absences of their operators. This explanation justifies this indicator being cited by 7 operators. However, only 2 people from SEMST and 2 CIPS cited it as well.

SESMT, on account of the safety area, mostly cited indicators related to work safety, since, as previously reported, the lack of meetings between participants in this group - and, consequently, the lack of use of indicators - also reflected in this category.

The second question in this category was how the company can measure improvements in working conditions. Approximately 30 ways were cited by people who participated in the research. The most cited way was through indicators. Even though it was the most cited, compared to the total number of people (70), only 17 pointed out this way of measuring improvements. Table 5 presents the 10 most cited ways by the study's respondents.

Table 5. Ways to measure improvements at work according to the groups' perception.

How the company measures work improvements?	CIPE	SESMT	Operators	Total (Absolut)
Through indicators	8	7	2	17
Reduction in the number of accidents	1	7	6	14
Charts/reports	9	0	0	9
Worker Satisfaction	0	5	4	9
Reduction in the number of outpatient complaints	0	4	4	8
Do not know	2	3	1	6
Feedback from operators	3	0	3	6

Monitoring of actions	5	0	0	5
Through SIGMASSQ present in each cell	2	1	2	5
Reduction of Absenteeism	0	2	3	5

Prepared by the author.

Other interesting ways were pointed out, but they are still through indicators, for example, by reducing the number of: accidents, outpatient complaints, injuries and absenteeism.

The existence of indicators that can measure and indicate working conditions is necessary for the various groups in the company that are concerned about and responsible for these conditions. The use of appropriate working conditions indicators facilitates the management of projects and programs in Ergonomics and Workplace Safety.

4. DISCUSSION

In relation to the factors that can influence health at work, the group of operators presented a perception more directly related to the activity compared to the other groups. This difference is due to the way the groups interact with the work situation. The group of operators, who carry out the work activity, are able to identify the factors present in the work environment, while the CIPA and SESMT groups observe the

prescribed tasks and standards and how far the operators' activity differs from them.

The importance of investigating the operators' point of view is due to the knowledge they have about their own activity. It is known that operators use their knowledge when carrying out their activities. These reflect the traits of their entire training and also of their experience, of the situations they encountered, of the actions they carried out (GUERIN, 2001).

This knowledge is used every day at work, even if it is not always formalized, expressed and recognized. The operators' usual interlocutors are not interested in explaining this knowledge, and many ignore its existence. This is the case, in particular, of repetitive situations under time constraints, socially described as “manual work”, despite the complexity of the information processing carried out by operators in such positions. When the results of a work analysis are presented to the operator involved, he often responds: “I didn’t even realize I was doing all that!” (GUERIN, 2001).

SESMT and CIPA observe the work being carried out and analyze the posture in accordance with what is recommended by biomechanics. This fact that CIPA and SESMT pay attention to the task and little to

the activity leads to a

distance from their perception to the real work situation, which can be explained by the way health and safety is structured in Brazil, what Oliveira (2003) calls the “legalistic view” of worker safety and health. For this author, worker health and safety programs, depending on the dominant culture in the overwhelming majority of companies, are normally designed and oriented to comply with the legislation that provides on the matter.

Assunção and Lima (2003) reinforce the issue of legal idolatry, warning that the requirements of the laws often become “mere rituals”, and compliance with what is established in the legislation is placed on a more important level than the prevention practice itself.

In this way, it is possible to state that the area of the company responsible for occupational health and safety (OSH) directs its point of view in compliance with laws and regulations, that is, what is prescribed by law to direct the

work of operators. For this reason, there is a difficulty in the perspective of these groups in relation to the real work activity and, consequently, the factors related to it.

The work analysis proposed by ergonomics contributes to providing a description of the work activity, a look at the work situation, which relates the activity, production and health. It thus transforms the representations of the problems encountered among the interlocutors involved: those responsible for the company, operators, worker representatives, etc. (GUERIN, 2001).

In relation to working conditions factors, the only one known as an indicator by 100% of the members of the three groups is work accidents. The explanation is historical-cultural, that is, since the beginning of the regulation of social rights in Brazil, international organizations such as the International Labor Organization (ILO) and the World Health Organization (WHO) have greatly contributed to the national framework. established. However, these bodies mostly present data related to work accidents. Likewise, the Ministry of Labor and Employment (MTE) and Ministry of Social Security (MPAS) produce administrative records, reports, statistics and yearbooks related to health and safety of the

work (SST), where the main focus is

accidents.

Of the MTE databases, the Federal Labor Inspection System (SFTI) is the closest to OSH-related concerns. Among its duties is the inspection or audit of work environments, with work accidents being one of the aspects observed.

Still regarding Brazilian legislation, the Ministry of Social Security and Assistance (MPAS) publishes the Statistical Bulletin. The answers to questions related to work analysis make it possible to conclude the importance of security in the perception of groups in relation to their participation in working conditions, relevant aspects in work analysis and indicators used to measure working conditions. In these analysis categories, all the most cited items are related to operator safety (such as the use of PPE), identification of risks in the area, number of accidents with and without lost time, frequency rate and severity.

Based on the theoretical framework on indicators, Brazilian legislation and its

actions to preserve health and working conditions and the points of view of social actors of Accidents at Work (BEAT), the Statistical Yearbook and Accidents at Work (AEAT), the Communication of Accident at Work (CAT), Work Accident Insurance (SAT), Accident Prevention Factor (FAP) and indicators related to accidents (CHAGAS et al., 2011).

5. CONCLUSION

of the company, in addition to the analyzed results of the case study carried out, it was possible to observe that:

- - By understanding the constituent aspects of the activity, it is possible to identify its conditions and, if necessary, intervene in the process to propose improvements. All participation and integration in the work process means that the professional can identify which variables or factors can influence working conditions and, consequently, the health of employees.
- It can be seen that the SESMT's perspective, focused on the task, reflects the perception of CIPA, which is also attentive to the task, assuming managerial responsibilities and summarizing the system of protecting the company's health in the task, moving away from the company's ergonomics programs that are focused on the activity. Therefore, the training of these professionals needs to introduce the difference between these two concepts: task and activity, as well

as presenting ergonomics that considers not only aspects related to work safety, but also aspects of work that interfere with the activity, such as work rhythm, working hours, physical space, etc

- It was noticed that people knew how to identify that the best ways to measure improvements and performance are through indicators, graphs and reports. Work is harmful when work regulation margins reduce the possibilities of maintaining operators' health. This concept is related to the demands for carrying out tasks, generating discomfort with physiological, cognitive or social effects for operators (ASSUNAÇÃO & LIMA, 2003). We know the importance of analyzing and controlling indicators related to work accidents, but currently, absences are no longer caused only by accidents, but by work-related illnesses, which can highlight the importance of other indicators such as, for example, hardship. Recently, this concept has been introduced into ways highly used by the main performance measurement systems and management systems. to the extent that several complaints and absences have presented psycho-physiological characteristics that are difficult to explain by the concepts of unhealthy or dangerous conditions. Work can be painful without being considered unhealthy or dangerous. The most evident manifestation of this growth in hardship lies in the simultaneous degradation of the psychic and physical balance in an increasing number of workers. This

- It was possible to notice the engagement of operators in matters related to working conditions, in contrast to other groups.

translates into a true “epidemic” of musculoskeletal problems and, at the same time, into a series of symptoms perceived as stress and psychosocial disorders (METZGER, 2011).

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