

STUDY OF THE RELATIONSHIP BETWEEN WORK STRESS AND ORGANIZATION STRESS IN HEALTH SECTOR ORGANIZATIONS

ABSTRACT

Work stress has gained prominence in the organizational world by the negative consequences on both of individuals and organizations. Although some authors have suggested the relationship between work stress and organization stress this relationship has been little explored. The aim of this study is to establish if there is a relationship between these two phenomena through a study conducted with 724 employees of healthcare organizations from the cities of Bogota and Cali, Colombia. The results suggest that indeed such a relationship exists, which could mean that future research may come to establish the characteristics of this relationship.

KEY WORD: work stress, organization stress, healthcare organizations

1. INTRODUCTION

Work stress has gain public pertinence since it appears among the most important psychosocial risks to which employees are exposed. Indeed, about 20% of European employees consider that work stress affects their health (INRS, 2008). However, authors as Graziani and Swendsen (2004) sustain that the interest in the work stress study goes beyond the desired to control its negative effects nor only on individual's health but also those that affect the performance of the organizations (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964; Shirom, 1982; Edwards, 1992; Kahn & Byosiére, 1992; Sonnentag & Frese, 2003; Gilboa, Shirom, Fried, & Cooper, 2008).

Some studies have shown that the professionals of the organizations of the health sector face a higher risk of suffering work stress than other professionals (Thomsen, Soares, Nolan, Dallender, & Arnetz, 1999; Weinberg & Creed, 2000; Fiabane, Giorgi, Sguazzin, & Argentero, 2013; Foureur, Besley, Burton, Yu, & Crisp, 2013). This situation may be explained because the professionals of the health sector are frequently exposed to stressful situations inherent to the nature of their job (Foureur, Besley, Burton, Yu, & Crisp, 2013),

which negatively affect their mental and physical health (Fiabane, Giorgi, Sguazzin, & Argentero, 2013). Given the negative effects that work stress has on people and organizations, it is important to identify the factors that could worsen or improve the welfare of these professionals in the workplace to prevent work-related diseases and at the same time, improve their performance, the effectiveness of the clinical practice, and the competitiveness of the organizations (Fiabane, Giorgi, Sguazzin, & Argentero, 2013).

The study of this phenomena in the Colombian context reveals that the levels of stress reported in professionals of the health sector vary between 9,1% and 95% depending on the tested population (Vergara, Abello, Salgado, & Becerra, 2015). The health sector in Colombia has been object of multiple transformations due to the changes introduced by the law 100 of 1993 which main objectives were the universal coverage and social health equity through the participations of the private sector (Arenas Ortiz & Andrade Jaramillo, 2013). This has brought a logic of cost control which has transformed the personnel administration practices and in general, it has produced changes in the work conditions that in turn have produced the development of work stress (Calabrese, 2006; Arenas Ortiz & Andrade Jaramillo, 2013; Vergara, Abello, Salgado, & Becerra, 2015) reaching, in some cases, the development of the professional burnout syndrome. (Tuesca-Molina, Iguarán, Suárez, Vargas, & Vergara, 2006).

Although many researchers have been interested in work stress in healthcare organizations, both at an international level (Thomsen, Soares, Nolan, Dallender, & Arnetz, 1999; Weinberg & Creed, 2000; Fiabane, Giorgi, Sguazzin, & Argentero, 2013; Jones, Wells, Gao, Cassidy, & Davie, 2013) and in Colombia (Vergara, Abello, Salgado, & Becerra, 2015; Castillo, Llanos, Gomez, Tapias, & Castro, 2014), the differences in the conceptual and methodological level and their results, still remain. (Fiabane, Giorgi, Sguazzin, & Argentero, 2013). In particular, it has been observed that within the dimensions that constitute the work stress phenomena, some authors have suggested that stress in the organizations may influence the work stress of their employees (Hall & Mansfield, 1971; Sainsaulieu, 2006; Huff, Huff, & Thomas, 1992; Smida & Gómez Mejía, 2010; Gómez-Mejía, 2012).

Even though there have been few studies regarding stress in the organizations, in a great part of them, stress in the organizations is associated to organizational change (Bigelow,

1982; Miller & Friesen, 1984) which may cause either strategic renewal (Huff, Huff, & Thomas, 1992) or even the disappearance of the organizations (Gómez-Mejía, 2012), therefore organization stress is seen as a catastrophe, in the mathematical sense of the term (Thom, 1974), which means, a bifurcation in the trajectory of development of the organization, a crisis (Mitroff, Shrivastava, & Udwadia, 1987; Shrivastava, Mitroff, Miller, & Miglani, 1988; Pearson & Clair, 1998). Despite the importance of the organizational change and strategic renewal and the effect it could have on the employees of the organization, the relation between the organization stress and work stress continues to be somewhat unexplored. The objective of this research is to explore this relation with an instrument that was developed from the transactional approach of stress.

The necessity to explore this relation emerges from the statements presented above, not only because of the interest that work stress arouses by its implications on people's health, but also because its characteristics should be established. Therefore, this study seeks to measure work stress of the health sector employees in Colombia through an instrument that includes items associated to stress in the organizations.

2. THEORETICAL FRAMEWORK

Some authors who have been interested in the study of work stress define stress as a response of the individual to a characteristic of the environment that is interpreted in the form of demand, threat, or challenge (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964; Kahn & Byosiere, 1992; Ganster & Rosen, 2013). Others define it as the psychological tension which arises from the group of demands of a work situation and the available decision freedom range of the employee to face those demands (Karasek, 1979), while others see it as the result of an unbalance between the effort and the rewards (Siegrist J. , 1996; Siegrist, Klein, & Voigt, 1996) or between the person and the environment (Edwards & Cooper, 1990), or even as the result of a transaction between a person and a situation that needs to be managed and therefore, an evaluation needs to be done (Lazarus & Folkman, 1984; Lazarus, 1998). This shows the conceptual evolution of stress from a behavioral model, where stress is explained by its causes or stressing factors, to interactionists models inspired by the unbalance between two dimensions, one regarding the subject and another regarding the situation, to reach the

transactional models in which an evaluation is needed to establish the level of stress, this means an evolution to a cognitive approach of stress.

Despite the great conceptual evolution of work stress, there seems to be an agreement regarding the relevance of the contribution of the transactional model, since it seems to have the key to explain the differences between individuals respect a same stressful situation (Ganster & Rosen, 2013). However, the investigations of the last two decades have been centered in the model of the demands and the freedom of decision (Karasek, 1979) and its variations (Ganster & Rosen, 2013). As a proof of that, the definition adopted by the European Agency for the safety and health at work-EUOSHA-is based on this approach because according to EUOSHA, an employee experiences stress when “the demands of his work are excessive and greater than his capability to respond to them” (EU-OSHA, 2010).

Regarding the measurement of the work stress construct, a literature revision shows that the behavioral investigations were centered in the identification of stressing factors and their consequences (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964; Spielberger & Reheiser, 1995). In the interactionist models, factors as the support of the bosses and colleagues, the conflict with users or clients, work overload and the balance with the personal life (Spielberger & Reheiser, 1995; Shukla & Srivastava, 2016), personality factors and others such as autonomy (Karasek & Theorell, 1990), are added to the characteristics of work. Finally, in the cognitive models, factors of organizational nature emerge, such as time pressure and available organizational and individual resources, but especially, they emphasize that this individual resources and previous experiences could influence the perception of individual stress (Spielberger, 2010).

Among the multiple stressing factors that have been studied in literature about work stress, organization stress emerges (Hall & Mansfield, 1971; Sainsaulieu, 2006; Gómez-Mejía, 2012). In their pioneer work about this matter, Hall and Mansfield (1971) define stress as an external force that operates on a system, either an organization or a person. Consequently, the stressed organization experiences an internal tension and in response to it, it undertakes efforts to respond to stress of external nature, as in the behavioral works, to produce a response that might be adaptative. This organizational tension, as well as the response, change the environment in which the employees function and it becomes a stressing

factor for individuals whom at the same time experience tension to produce adaptive responses. This cascade stress mechanism evidence that capability and the quality of response of the organization depend on the individuals that constitute it. Therefore, these authors sustain that in periods of organizational change, individuals experience an increase in their perception of tension and conflict in their job.

Subsequently, Huff et al. (1992) explain that stress in organizations¹ as a “summary” concept that expresses the forms in which the current strategy of an organization is not satisfactory, reflecting the dissatisfaction of the individuals and the imperfections in the adequacy of the organization towards its environment. So, the stress of an organization increases when it is situated in a dynamic environment, when there is technological change (Van de Ven, 1986), social and demographic changes (Huff, Huff, & Thomas, 1992), new competitors (Porter, 1980), employee turnover and a mediocre or inferior performance (Huff, Huff, & Thomas, 1992). In this approach, it is assumed that the organization accumulates stress until the strategic renewal of the organizations is done. This is possible because the main actors of the organization are forced, by unresolved stress, to consider the pros and cons of the current strategy and to formulate a new strategy. Then again, it is possible to see the connection between the organization stress, that is evident at the individual level, and the necessity to build an answer from the individual level.

Finally, Gómez-Mejía (2012) defines organization stress as the state in which an organization suffers from unbalancing due to the action or the presence of one or several variables that are part of its strategic dimensions and that threaten its endurance. In this context, the strategic dimensions of the organizations are the objectives set by itself, the resources and the variables of the environment (Smida & Gómez Mejía, 2010; Gómez-Mejía, 2012). In the work of Gómez-Mejía (2012), which is centered in organizations of the health and social sector in France, it is found that there is a link between stress in the organizations and work stress of their employees. Then, if an organization is stressed, it would be expected that its employees are even more stressed (Gómez-Mejía, 2012).

¹ The English expression “organization stress” is used as “stress in the organizations” to avoid confusion with the expression “organizational stress” that evokes the stress of the individuals in an organizational situation, instead of showing that the organization as a system, the one that is stressed.

3. METHODOLOGY

The study that is reported in this article is analytical and transversal. It was developed in six organizations of the health sector of the cities of Cali and Bogotá (Colombia). To access to the organizations of the health sector of the city of Cali, the data base of the Public Health's Department of the city of Cali and personal contacts of the research team of Cali and Bogotá. For each participant organization, a representative sample was built (Table 1), which summed up a total of 1076 employees to survey. Finally, 724 people responded, with an error of 3,3% and a response rate of 67,28%.

Table 1
Population and Sample

Organization of the health sector	Population	Sample
Health organization A	222	146
Health organization B	34	32
Health organization C	528	219
Health organization D	560	263
Health organization E	931	238
Health organization F	390	178
Total	2665	1076

Source: data of the population provided by the Human Resources area of the surveyed clinics and hospitals. Calculation of the sample made by the research team (2015).

An instrument was designed to be applied to the employees of each of the organizations that accepted to participate in the study. The instrument has 47 questions, eight of these correspond to the sociodemographic variables which are: age, years of experience, gender, level of education and profession. Besides, the specific dimensions of the work stress study are explored, such as the characteristics of the task, the relationship with the boss or superior, the available resources and the relationship with co-workers or user. It is important to mention that, to study stress in the organizations, four additional dimensions were added, these are: time pressure, the conflict of objectives among units of the same organization, the importance of the interests involved in the game, and the organization in its environment. These dimensions arise from the work of Gómez Mejía (2012). The total number of questions per dimension is shown in table 2.

Table 2
Dimensions of the instrument

Dimensions	No. questions
Characteristics of the task	8
Relationship with the boss or superior	6
Resources	2
Relationship with co-workers or users	6
Time pressure	7
Conflict of objectives	3
Importance of the interests involved in the game	1
Environment of the organization	6

Source: the authors

For each item, we requested the respondents to identify their degree of agreement or disagreement with a statement, or the frequency of appearance of the situation, using Visual Analogue Scales-VAS- (Lesage & Chamoux, 2008) which could take values between 0 (total disagreement or very few times) and 10 (totally agree or very frequently). This VAS allows to have continuous variables instead of discrete variables for the analyses, which delivers higher sturdiness. These scales seek to establish the level of agreement of the respondent with every statement. The instrument was applied in the clinics and hospitals that voluntarily decided to participate in the study. The field work was undertaken with the collaboration of the Human Resources Area of each organization. In these organizations, a team administrated the survey and filled out on paper, with an average duration of 20 minutes. Only one organization filled out the survey online.

Ten of the 38 items that comprise the instrument are considered negative and the other 28 as positive. To make the analysis, a work stress score was built. The construction of the score presumes that the instrument was designed as an added grading scale (Spector, 1992), this is like the combination of a group of variables which allows measuring the subjacent concept, in this case, work stress.

Then, the starting point is the assumption that all the variables have the same relative weight in the work stress phenomena, which is the construct for which the instrument was elaborated, and then a simple addition was made. A very high score indicates a higher level of stress. Using the overall score obtained by each participant as a parameter, made it possible

to determine the existence of four levels of work stress in which employees are ranked. These levels are determined by the quartiles of the score variable (table 3). In this way, the perceived work stress by an employee could be low, medium, moderate or high.

Table 3
Score (by quartiles) of the employee's perception of professional stress in all the organizations participating in the study

Levels of stress	Score	Standard deviation	Minimum	Maximum
Low	111,21	19,12	0	131,21
Medium	143,70	7,211	131,25	155,90
Moderate	166,44	6,05	155,94	178,02
High	201,00	19,82	178,3	288,40

Source: the authors based on the results of the study.

Table 4 shows the results of work stress of the employees per each studied organization of the health sector, which allows to conclude that the employees of these organizations perceived that their work stress is in a medium and moderate level. In terms of analysis, only those individuals and organizations that present a moderate or high level of work stress could be considered as stressed. This means that only four of the eight organizations showed levels of work stress that require an intervention.

Table 4
Perception of the employee about work stress

Organization	City	Medium Score of the employees	Score
Organization B	Bogotá	137,62	Medium
Organization A	Bogotá	162,45	Moderate
Organization E	Bogotá - Cali	147,33	Medium
Organization C	Cali	148,37	Medium
Organization F	Cali	153,06	Medium
Organization D	Cali	161,09	Moderate

Source: the authors based on the results of the study.

To examine the instrument, a Principal Components Analysis (PCA) was employed, using the database of participants from the study. As a reliability measure, the internal

consistency of the items of the instrument was examined calculating the alpha of Cronbach coefficient of correlation for each dimension and for the totality of the instrument. The alpha of Cronbach evaluates the degree of correlation among the items, and a value higher than 0,70 is considered satisfactory. In the case of the instrument designed to measure work stress, its alpha of Cronbach was 0,8691.

4. RESULTS

Table 5 shows the results of the work stress of the organizations of the health sector in Cali and Bogotá. It could be established that differences aren't significant, although the minimum score in Cali is above Bogotá and the maximum score is below it.

Table 5
Work stress of the health sector in Cali y Bogotá

City	Sample	Medium Score	Standard deviation	Minimum	Maximum
Bogotá	244	156,57	38,89	0	288,40
Cali	473	155,03	34,33	31,40	263,19

Source: the authors based on the results of the study.

To establish the relation among the different dimensions that were evaluated through the instrument, a Principal Components Analysis was done with nine dimensions. To perform this analysis, three variables were excluded. After doing the analysis of correlations (annex c), two variables showed a correlation higher than 0,5 and the information could be redundant. Additionally, another variable was excluded because it measured the number of hours worked in the previous week, then it didn't have the same behavior of the other 36 remaining variables.

Annex d shows the output of the Principal Components Analysis with nine dimensions to which a Varimax rotation was applied, as it can be observed in the total number of components that should be selected using the Kaiser criteria, meaning that those components that have an eigen value above 1, is of 9. However, these nine resulting dimensions do not accurately represent the theoretical elements that were evaluated in the instrument. As a result of this analysis, another eight variables were excluded because the absolute value of each of their loading factor was below 0,3 in the nine dimensions.

Therefore, we worked with five components that would explain 48% of the data. To this treatment, we applied the Varimax rotation, which outputs are shown in annex e. When revising the components, the variables with an absolute value above 0,3 are selected.

Tabla 6

Dimensions and variables that constitute work stress of the employees from the organizations of the health sector

Characteristics of the task
Unpleasant task assignment
New and unfamiliar tasks
Tasks that aren't part of the job assignments
To experience doubts about the responsibilities of the job position
Frequent changes between boring and demanding tasks
Organizational characteristics
Receiving specific training
Support from the boss or hierarchic superior
Participation in the decision-making process of the unit
Team motivation
Overtime compensation
Time pressure
Experiences an increase in job responsibilities
Felling obligated to make on the go work decisions
Excessive procedures and formats
Tasks with a short or insufficient deadline
Environment of the organization
Demand of health services
Legislative and regulatory framework of the sector
Changes in the directive personnel of the organization
Competition in the health sector
Relationship with users
Receives mistreatment from the users
To face situations of crisis
Decisions that imply the life or death of the patients

Source: the authors based on the results of the study.

As can be appreciated in table 6, the characteristics of the tasks have been one of the most referenced dimensions in the studies about work stress. The fact that it is strongly associated with difficulties with the boss or immediate superior and mistreatment from colleagues, calls for attention.

Work stress of the employees of the participant organizations of the health sector is affected by the variables that arise from the five dimensions, which respond to the suggested

dimensions from of the precedent studies but are differentiated by the emerging of time pressure and environment of the organization. Inside the dimension of time pressure, the excessive procedures and formats, continuously increasing in the jobs of the health sector, deserves attention (Arenas Ortiz & Andrade Jaramillo, 2013; Castillo, Llanos, Gomez, Tapias, & Castro, 2014).

The appearance of the dimension “relationship with users” evidences the strong emotional tension and responsibilities that implies the work in the health sector, and which leads to work stress and subsequently, to the emergence of pathologies in the personnel, which had been reviewed by Gómez Esteban (2004).

Regarding the relationship with the boss or superior, besides the traditional variables, some variables such as team motivation and specific work training, were associated. This could be explained by the influence of the boss in the behavior of these variables.

5. CONCLUSIONS

Form the theoretical perspective, the results of this study allow us to conclude that organization stress has effects on work stress. However, it would be necessary to undertake new studies with other types of organizations in order to identify the characteristics of this relation.

From the methodological perspective, this study constituted an advance in the tools for the study of work stress in the sense that it nor only develops an measuring instrument, as a result of an adaptation, but also the use of the AEV is an original contribution since it shows that the results of the AEV have a normal behavior in our representative populations.

From the empirical approach, the results of this investigation show that the five variables that more affect the work stress of the employees in the organizations of the health sector that were tested in this study are: competition in the sector, necessary resources, support of the boss, demands of the health service and specific training. The organizations would have the capability to act on the possibility to offer specific training for the job positions, gain the support of the directives towards the employees in the development of the work, and procure an endowment of enough equipment and resources for the accomplishment of the tasks.

In future research, it will be necessary to reduce the number of items that constitute the original instrument and circumscribe only to those that resulted significantly for the five dimensions of work stress found.

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Annexes

a. Table b1. Descriptive statistics used

Variabl	Mea	Deviatio	Minimu	Maximu
P01 Unpleasant tasks	1,9	2,4	0	10
P02 New tasks	2,6	2,7	0	10
P03 Specific training	6,0	3,4	0	10
P04 Deal with situations of crisis	0,5	0,3	0	1,1
P05 Dysfunctional tasks	3,1	3,0	0	10
P06 Doubts about responsibilities	2,5	2,7	0	10
P07 Interruptions	4,9	3,2	0	10
P08 Frequent changes demanding and boring	3,6	3,1	0	10
P09 Difficulties	2,4	3,0	0	10
P10 Support of the boss	7,0	3,1	0	10
P11 Recognition	4,3	3,5	0	10
P12 Difficulties with superior	1,8	2,6	0	10
P13 Decisión making participation	5,7	3,2	0	10
P14 Inadequate orientation	2,9	2,8	0	10
P15 Necessary resources	7,0	2,9	0	10
P16 Number of people	5,9	3,1	0	10
P17 Assuming extra work	4,4	3,1	0	10
P18 Mistreatment from users	3,7	3,3	0	10
P19 Mistreatment from colleagues	1,8	2,4	0	10
P20 Competition among colleagues	3,1	3,1	0	10
P21 Tasks that others don't do	3,4	3,0	0	10
P22 Co-workers motivation	5,5	2,7	0	10
P23 Overtime hours/week	4,6	1,2	0	9,6
P24 Overtime compensation	3,4	3,8	0	10
P25 Increase in job responsibility	5,2	3,0	0	10
P26 On the go decisions	4,8	3,2	0	10
P27 Procedures	5,8	2,9	0	10
P28 Short deadlines for tasks	5,6	3,1	0	10
P29 Available time for personal issues	4,0	2,9	0	10
P30 Negative attitudes	1,9	2,4	0	10

Variabl		Mea	Deviatio	Minimu	Maximu
P31	Contradictory tasks	2,8	2,9	0	10
P32	Conflict with other departments	3,0	2,9	0	10
P33	Decisions about the life or death of	2,3	3,4	0	10
P34	Health services demand	6,8	3,1	0	10
P35	Legislative framework changes	4,9	3,0	0	10
P36	Directives personnel change	4,3	2,9	0	10
P37	Competition in the sector	7,7	2,6	0	10
P38	To hire qualified personnel	4,3	2,7	0	10
P39	Provisional solutions	5,1	3,1	0	10

Source: results of the treatment of the data in Stata.

b. Principal Components Analysis with 9 components

Table d 1. Principal Components Analysis with eigen value and proportion of the variance explained without sin Varimax

Component	Eigen value	Difference	Proportion	Cumulative
Comp1	5,13567	2,96427	0,19020	0,19020
Comp2	2,17140	0,59743	0,08040	0,27060
Comp3	1,57397	0,20163	0,05830	0,32890
Comp4	1,37234	0,16505	0,05080	0,37980
Comp5	1,20730	0,10258	0,04470	0,42450
Comp6	1,10472	0,03767	0,04090	0,46540
Comp7	1,06705	0,03728	0,03950	0,50490
Comp8	1,02976	0,02628	0,03810	0,54300
Comp9	1,00348	0,06380	0,03720	0,58020
Comp10	0,93969	0,08154	0,03480	0,61500
Comp11	0,85815	0,02321	0,03180	0,64680
Comp12	0,83494	0,10277	0,03090	0,67770
Comp13	0,73217	0,01863	0,02710	0,70480
Comp14	0,71354	0,01707	0,02640	0,73130
Comp15	0,69647	0,02028	0,02580	0,75710
Comp16	0,67618	0,02003	0,02500	0,78210
Comp17	0,65615	0,04042	0,02430	0,80640
Comp18	0,61573	0,01896	0,02280	0,82920
Comp19	0,59677	0,01152	0,02210	0,85130
Comp20	0,58525	0,01235	0,02170	0,87300
Comp21	0,57290	0,03309	0,02120	0,89420
Comp22	0,53980	0,02701	0,02000	0,91420
Comp23	0,51279	0,02170	0,01900	0,93320
Comp24	0,49109	0,02053	0,01820	0,95140

Comp25	0,47056	0,02783	0,01740	0,96880
Comp26	0,44272	0,04331	0,01640	0,98520
Comp27	0,39941		0,01480	1,00000

Source: the authors based on the results of the study.

Table d 2. Loading factors of the variables in the 9 components Varimax rotation

Variable	Comp 1	Com p2	Comp 3	Comp 4	Comp 5	Comp 6	Comp 7	Comp 8	Comp 9	Unex plaine d
Unpleasant tasks	0,424 7	- 0,060 7	- 0,169 5	- 0,024 3	0,055 9	- 0,106 7	0,098 8	0,011	- 0,031 1	0,479 1
New tasks	0,497 7	0,050 8	0,046 7	- 0,088 3	- 0,019 5	- 0,050 6	0,040 3	- 0,019 6	- 0,039 8	0,466 1
Specific training	0,162 4	0,019 4	0,047	- 0,036 1	0,207	- 0,533 4	0,167 3	- 0,020 8	0,176 8	0,436 2
Deals with situations of crisis	0,065 2	0,153 4	0,073 4	0,444 2	0,022 8	- 0,087 7	- 0,021 4	0,036 1	- 0,126 9	0,448 5
Dysfunctional tasks	0,329 4	- 0,043 3	0,085	0,285 2	- 0,055 1	0,074 3	- 0,284 1	- 0,033 5	- 0,002 2	0,412 4
Doubts about responsibilities	0,385 4	- 0,057 7	0,055 8	- 0,059 2	- 0,143 1	0,242 3	0,095 2	0,110 2	- 0,088 1	0,483 5
Frequent changes demanding and boring tasks	0,412 9	0,072 5	- 0,024 8	0,076 3	0,004 7	- 0,058 6	- 0,060 1	- 0,041 6	- 0,107 1	0,452
Difficulties with superior	0,127 9	- 0,016	- 0,409 9	0,049	0,017 2	0,061 8	0,142 6	0,040 7	0,099 7	0,411
Support of the boss	- 0,018 1	0,057 4	0,5	- 0,158 9	0,014	0,056	0,017 6	0,242 9	- 0,024 5	0,387 2
Decisions making participation	0,049	-0,03	0,455	0,241 1	0,009 7	0,112 4	0,077 9	- 0,218 1	0,227 1	0,413 2
Inadequate orientation	0,031 5	0,111 9	- 0,338 7	0,003 7	0,096	0,124 6	0,033 7	- 0,277 8	0,306 9	0,468
Mistreatment from users	- 0,035 3	- 0,071 5	- 0,045 3	0,617 1	- 0,012 8	- 0,025 7	- 0,018 1	0,029 4	0,089 7	0,362 9
Mistreatment from colleagues	0,046	- 0,055 3	- 0,191 6	0,268 7	0,018 4	0,000 2	- 0,012	0,389 8	0,088 3	0,408 3
Competition among colleagues	- 0,002 7	0,023	0,028 3	0,000 5	0,015 8	0,021 7	0,013 4	0,751 3	0,080 8	0,275 8

Team motivation	0,121	-	0,387	0,028	0,041	-	0,097	-	0,114	0,453
		0,040	4	4	3	0,236	6	0,084	3	2
		3				1		4		
Overtime compensation	0,052	-	0,016	-	-	-	0,688	0,012	0,073	0,349
	3	0,011	1	0,009	0,011	0,047	2	2	5	7
		7		6	4	2				
Increase in job responsibility	0,038	0,430	-	-	-	0,143	0,104	0,048	0,020	0,432
	5	3	0,021	0,019	0,121	7	9	5	1	8
			7	8	4					
On the go decisions	-	0,508	0,050	-	-	0,096	0,221	-	-	0,356
	0,024	6	8	0,004	0,041	6	4	0,114	0,076	5
	5			4	1				9	
Excessive procedures	-	0,470	-	0,084	0,068	-	-	0,037	0,114	0,399
	0,031	3	0,004	2	1	0,107	0,182	9	9	5
	2		9			9	4			
Short deadlines for tasks	0,036	0,508	-	-	0,037	-	-	0,094	-	0,377
	4		0,036	0,080	4	0,122	0,132	3	0,006	4
			9	4			4		4	
Decisions about the life or dead of the patients	-	0,070	0,023	0,369	0,045	0,155	0,356	-	-	0,412
	0,177	8		7	8	5	2	0,033	0,289	8
	3							6	8	
Demand of health services	-	-	-	-	0,593	-	0,052	0,032	-	0,425
	0,019	0,006	0,053	0,012	5	0,165	8		0,092	3
	6	1	9	8		1			7	
Legislative framework changes	0,06	-	0,056	-	0,437	0,244	-	0,119	-	0,469
		0,000	2	0,061	4	2	0,040	3	0,122	2
		5					9		3	
Directive personnel change	0,095	-	0,015	-	0,160	0,481	0,224	0,048	0,141	0,434
	3	0,026	2	0,070	2	7	1	6	6	5
		8		9						
Competition in the sector	-	-	0,037	0,052	0,545	0,066	-	-	0,037	0,488
	0,053	0,008	3	9	8	5	0,059	0,059	8	6
	8	7						1		
Personnel availability	-	0,001	0,025	0,017	-	-	0,041	0,102	0,735	0,356
	0,060	8			0,060	0,019	7	7	6	4
	8				4	6				
Provisional solutions	0,131	0,054	0,087	-	0,147	0,357	-	-	0,209	0,474
	8	7		0,001	6	3	0,239	0,119	8	3
				7			9	8		

Source: the authors based on the results of the study.

c. Principal Components Analysis with 5 components

Table e 1. Principal components analysis with eigen value and proportion of the variance explained without Varimax

Component	Eigen value	Difference	Proportion	Cumulative
Comp1	4,12153	2,09156	0,19630	0,19630
Comp2	2,02997	0,53858	0,09670	0,29290
Comp3	1,49140	0,22371	0,07100	0,36390
Comp4	1,26768	0,09775	0,06040	0,42430

Comp5	1,16993	0,14887	0,05570	0,48000
Comp6	1,02107	0,02807	0,04860	0,52860
Comp7	0,99299	0,10316	0,04730	0,57590
Comp8	0,88984	0,05214	0,04240	0,61830
Comp9	0,83770	0,09199	0,03990	0,65820
Comp10	0,74570	0,03412	0,03550	0,69370
Comp11	0,71158	0,05408	0,03390	0,72760
Comp12	0,65750	0,01214	0,03130	0,75890
Comp13	0,64536	0,02475	0,03070	0,78960
Comp14	0,62062	0,01240	0,02960	0,81920
Comp15	0,60822	0,01826	0,02900	0,84810
Comp16	0,58996	0,00968	0,02810	0,87620
Comp17	0,58028	0,02342	0,02760	0,90390
Comp18	0,55686	0,03317	0,02650	0,93040
Comp19	0,52369	0,03888	0,02490	0,95530
Comp20	0,48481	0,03149	0,02310	0,97840
Comp21	0,45332	,	0,02160	1,00000

Fuente: los autores con base en los resultados del estudio

Table e 2. Loading factors of the variables in the 5 components with Varimax rotation

Variable	Comp 1	Comp2	Comp3	Comp4	Comp5	Unexplaine d
Unpleasant tasks	0,441	-0,1132	-0,0389	0,0713	0,0324	0,5073
New taks	0,4809	0,0394	0,1117	-0,107	-0,0102	0,4678
Specific training	0,0466	-0,0303	0,4273	0,0306	-0,0049	0,6604
Deal with situations of crisis	0,0457	0,1843	0,0335	0,4218	-0,0413	0,4978
Disfunctional tasks	0,3302	0,0529	-0,0982	0,0824	-0,0589	0,5748
Doubts about responsibilities	0,4455	-0,022	0,0006	-0,0777	-0,0171	0,5518
Changes in demanding and boring tasks	0,3869	0,0752	-0,029	0,0632	-0,0225	0,4905
Support of the boss	-0,0901	0,1304	0,3959	-0,2465	0,0784	0,5242
Decision making participation	0,0077	0,0502	0,45	0,0438	0,0031	0,6131
Mistreatment from users	0,0341	-0,0293	-0,0686	0,548	-0,0555	0,4822

Team motivation	0,0022	-0,0282	0,5205	-0,0529	-0,0506	0,4519
Overtime compensation	0,0888	-0,152	0,3658	0,313	0,0051	0,5885
Increase in job responsibilities	0,0857	0,4226	-0,015	0,0408	-0,0615	0,4871
On the go decision	-0,0109	0,4576	0,1117	0,0763	0,0114	0,4677
Excessive procedures and formats	-0,0574	0,4925	-0,0415	0,0292	0,0254	0,4501
Short deadlines for tasks	0,008	0,5117	-0,0373	-0,0889	0,0105	0,4183
Decisions about the life and death of the patients	-0,1227	0,0039	0,0143	0,5447	0,1144	0,5059
Demand of health services	-0,0528	-0,0494	0,0481	0,0662	0,5431	0,5138
Legislative framework changes	0,0841	0,0508	-0,0678	-0,0667	0,5131	0,4999
Directive personnel change	0,2363	0,0017	-0,0147	-0,0392	0,3295	0,658
Competition in the sector	-0,0633	0,0109	-0,0021	0,0278	0,5445	0,5085

Source: the authors based on the results of the study.