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Determination of Burnout Syndrome among Middle and Senior Managers in Manufacturing Industry in Ciudad Juarez

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Abstract

Burnout syndromeis caused by chronic job stress and it is considered one of the main professional diseases of XXI Century.In developing countries like Mexico, occupations asmiddle and senior manager positionshave not been sufficiently explored on this topic, especially in the industrial manufacturing sector.These personnel are fundamental for the growth of industries and usually must respond to high work demands, such as: short time decision making processes, extended working hours, personnel organization, production difficulties, among others. A sample of 361 participants was conformed; 34 were senior managers and 327middle managers fromseveral departments.The Maslach Burnout Inventory General-Survey (MBI-GS) was applied in six manufacturing companies in Ciudad Juarez.The Burnoutwas determined by grades and levels. Percentiles 33.3 and 66.6 were used as cut off pointsfor each dimension: Emotional Exhaustion, Cynicism and Professional Effectiveness,five levels of Burnout were determined as none, low, middle, fairly and extreme. Results indicate a middlegrade of Burnout for all three dimensions among senior and middle managers. By levels,46.26% presents fairly and extreme level, 15.51% have a middle level and 38.23 % presents none or low levels of Burnout. In conclusion, it is recommended that manufacturing industries take preventive actions that contribute to physical and mental health of their key workers.

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*Keywords:*Manufacturing Industry; Maslach Burnout Inventory (MBI-GS); Grades and Levels; Middle and Senior Management

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1. Introduction

Burnout Syndrome arises as a result of high levels of stress, frustration, loss of capacity to deal with the problems generated by the work environment.Freudenberguer (1974), who observed in some patients in his free clinic some symptoms of anxiety and depression after one year of work generate interest in the subject.

However, it is from 1976 when Cristina Maslach becomes the main reference to the subject, taking the concept of a medical-clinical model to a psychosocial[1].From this perspective, is considered as a process that is developed by the interaction between the characteristics of the work environment in which the person serves and their personal characteristics and not as state, product of the perceived labor stress[2]. Her contribution with Susan Jackson allowed tocreate the Maslach Burnout Inventory (MBI) in 1981[3]. Aninstrument used internationally to measure Burnout andwhich have emerged diverse adaptations as MBI-GS,a version not exclusively oriented to those caring professions.The three scales of thisquestionnaire are: an emotional exhaustion, cynicism and professional effectiveness, so the presence of the syndrome is described as a high score on emotional exhaustion, cynicism and low on professional effectiveness[4].

In developing countries like Mexico, this syndrome has received a growing interest.The economic costs generated in health, as in the organizations have allowed to become a topic of interest of researchers [2].A problem that affects 75% of employees in Mexico[5], placing above China and United States[6].According to the International Labor Organization (ILO), about 160 million people suffer from work-related illnesses, which generate an economic impact equivalent to 4% of Gross Domestic Product (PIB) in the world. More than twenty times the resources allocated for the prevention of risks [7]. Despite this, it is common that the companies remaining the importance to the perceived stress by employees, because in this way weak and incompetentworkers are eliminated by intolerance in the working pressure.Which puts at risk the stability of an organization if the syndrome is present in those key workers in the management of an organization [8], which is a population scarcely studied in Mexico [1].These personnel are considered as key part into the companies because they usually must meet with long hours of work, they should respond to high work demands and in some cases they are responsible to attend important issues for the development of companies,among others. In addition, competition with other colleagues can become stressful, without mentioning the fact of having to maintain conformity to all employees who are in charge [9].

Considering that Ciudad Juarez is one of the main industrial zones in the northern part of Mexico, the correct detection of the syndrome is important for preventing or reducing its consequences in the individual as in the organizations. The objective of this article is to determine the presence of Burnout syndrome among middle and senior managers in the manufacturing industry of Ciudad Juarez, Chihuahua, Mexico. First, placing the grade (low, middle and high) of each dimension; subsequently, in a general way through five levels (none, low, middle, fairly and extreme) according to the methodology employed by Guerrero andVicente in 2001.

2. Literature Review

2.1 Characteristics of Burnout Syndrome

Burnout is a state of physical, emotional and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding [10].The key dimensions are:

- Emotional exhaustion: there is a tiredness and fatigue that can manifest itself physically, mentally or as a combination of both. There is a decrease and loss of emotional resources that correspond to the extent of feeling exhausted emotionally.
- Cynicism: It is understood as the development of feelings, negative attitudes, distant and cold towards other people. Especially to the beneficiaries of its work. It is accompanied by irritability and a loss of motivation to work.
- Professional effectiveness: refers to feelings of competition and successful completion. Corresponds to evaluate own work negatively, the reproach of having not reached the objectives and experiences of failure with staff and low self-esteem professional.

In the development of the syndrome four types of enhancers are distinguished. From a social environment

thisincludesthe definitions in the exercise of professional role and the physical work environment and its content. Interpersonal section includes relationships that the professionals have with their coworkers and the beneficiaries of their work. The individual environment, considers the personal characteristics of each employee such as sex, age, marital status, among others. Finally, the organizational [2].In the latter environment, the principal causes are commonly attributed to a increased focus on profitability and salary levels [11]. This due to typically employees takes additional tasks and responsibilities often without additional reward. According to a survey made by the WageIndicator Foundation, the wage levels causesignificant stress for Mexicans; 79% respondedthat they were not paid for exceeding working hours, compared with 69% of Spaniards, 67% of Argentines, and 54% of the British[11].

Among others causes areoverload of work, the restriction in decision-making, the shift, ambiguity and role conflict and unsatisfactory relationships[12].These latter are perceived with greater emphasis on middle managers who report high levels of perceived stress than personnel performing managerial positions[13].Other organizational factors that significantly influence are those related to the physical working environment, such as noise, its intensity, vibrations, lighting, temperature, including weather conditions which have to go to work, hygienic conditions, toxicity of substances that must be handled etc.

2.2. Consequences of Burnout

While the work of industries personnel appear to be pure profit, receive high salary has its price. Employees with higher levels of burnout are more likely to report several physical health [14], emotional and behavioral problems. Every day, 6,300 people die as a result of accidents or illnesses related to work, representing about three million of deaths per year [15]. In addition, this syndrome increase the risk of mortality 26% by exhaustion, 29% by cynicism and 22% by lack of professional effectiveness in people under 45 years old[16]. According to the literature reviewed, physical consequences include: headaches, muscle aches, gastrointestinal upset, ulcers, diarrheal problems, decreased weight, high blood pressure, insomnia, feelings of breathlessness, palpitations, cardiovascular impairment, migraines, sleep disorders, allergies, asthma, chronic fatigue, problems with menstrual cycles and even brain damage[17-20], nausea, loss of speech, loss of appetite, sexual dysfunctions,recurrence of infections and respiratory disorders [21].

Emotional symptoms include: irritability, anxiety generalized and focused at work, depression, frustration, boredom, emotional distancing, impatience, and confusion, feelings of loneliness and empty, impotence [30].

Consequences in the behavioral field also are noted as: apathy, sarcasm, absenteeism, elevated tone of voice (frequent cries), difficulty in concentration, decreased contact with people and of the service quality, aggressiveness, abrupt mood swings[26]. Among others consequences are separations or divorces, indecision, increase in drug addiction[22-25].

2.3. Organizational Effects of Burnout

The effects of having workers affected by the syndrome, will be manifested in the objectives and results of the Organization[27]. Between the organizational consequences are absenteeism,late arrivals, unwanted rotation, sabotage, accidents at work, abandonment of the workplace earlier, errors, under performance and productivity[28], poor quality [22], tendency to isolation, deterioration of relations with colleagues and supervisors, decrease of the sense of accomplishment, interpersonal conflicts, professional avoidance [18,21].

3. Methodology

3.1. Participants

The sample is not probabilistic, since the MBI-GS questionnaire was applied during the time assigned for human resources and for those industries that allowed access.In this way, six different companies from Ciudad Juarez were

surveyed. Among them, three related to automotive products, two dedicated to the production of electrical products and one whose products are diverse. Finally, 361 questionnaires were collected of which 249 were men and 112 women; 34 were senior managers and 327 middle managers. Due to the heterogeneity of the jobs in companies, were catalogued six positions held within each Department: Manager (9.4%), supervisor (35.2%), technical (19.1%), group leader (13.6%), administrative manufacturing (5.8%) and administrative offices (13.0%), 3.9% omitted his current position.As senior managements, were considered only managers; while as middle managers the other positions. Five departments were listed: production and maintenance, engineering, materials, safety and environment and administration. The workers age is in a range of 18 to 60 years, with an arithmetic mean of 37 years old and a standard deviation of 9.3.The antiquity in the current job is 103.12 months. In terms of schooling, 7.2% have middle school, 18.3% high school, 62.0% bachelor's degree and 11.1% is graduated, 5 participants omitted information. On the other hand, a 31.9% are single, 54.8% are married, 10% live in free union, 1.4% is widowed and 0.3% divorced, 4 participants omitted the information of their marital status.

3.2. Instruments

The Maslach Burnout Inventory General Survey questionnaire (MBI-GS)was applied in a Spanish version by Moreno-Jimenez, Rodriguez -Carvajal, and Escobar (2001)[4].This allows measuring those conditions that perpetuate the chronic stress caused by conditions in the labor context through 16 itemswith a Likert response scale of seven alternatives, which are distributed in three dimensions: emotional exhaustion, cynicism and professional effectiveness. Emotional exhaustion was measured with five items and includes questions like “work all day is really stressful for me?” (Item 4), cynicism was measured with five items; this dimension consider questions like “Idoubt about the value of my work”(item 15) and professional effectiveness was measured with six items, among them “I am able to effectively solve the problems that rise in my work” (item 5).

A consent sheet was provided attached to the MBI-GS questionnaire. Subsequently, the informationwascaptured into a database using SPSS v.20. The appropriate validation of the questionnairewas realizedusing Cronbach's Alpha to ensure the validity of each dimension.

3.3. Determination of Burnout scales for grades

The grade of burnout (low, middle and high) of each dimension is obtained of dividing the score values of each dimension using the percentile 33.3 and 66.6 as a cut-off point.The categorization obtained through SPSS is shown in table 1. Subsequently, the arithmetic mean of the score values of each dimension, allows locating the grade of burnout. This measure of central tendency it is a suitable measure which increase significantly the power of statistical analyses using continuous values[1].

Table 1. Distribution of scores by dimension

Burnout Dimension by grade	Emotional Exhaustion (EE)	Cynicism (CC)	ProfessionalEffectiveness (PE)
Low	<=7 pts	<=3 pts	>=33 pts
Middle	8-12 pts	4-7 pts	28-32 pts
High	>=13 pts	>=8 pts	<= 27 pts

3.4. Determination of Burnout Levels

To get an overview of the Burnout syndrome, was built a new categorical variable with five levels, from combinations obtained in the percentiles 33.3 and 66.6 which were used as cut-off points. In the table 2, is described how the 27 combinations were categorized.

Table 2. Distribution of combinations

Categorical Level	Low Grade (<33.3)	Middle Grade (33.3-66-6)	High Grade (>66.6)
None	EE, CC, PE		
None	EE, CC	PE	
None	EE, PE	CC	
None	PE, CC	EE	
Low	EE, CC		PE
Low	EE, PE		CC
Low	PE, CC		EE
Low	PE		EE, CC
Low	CC		EE, PE
Low	EE		PE, CC
Middle		EE, CC, PE	
Middle	EE	CC	PE
Middle	EE	PE	CC
Middle	CC	EE	PE
Middle	CC	PE	EE
Middle	PE	EE	CC
Middle	PE	CC	EE
Fairly		EE, CC	PE
Fairly	PE	EE, CC	
Fairly		EE, PE	CC
Fairly	CC	EE, PE	
Fairly		CC, PE	EE
Fairly	EE	CC, PE	
Extreme			EE, CC, PE
Extreme		PE	EE, CC
Extreme		CC	EE, PE
Extreme		EE	CC, PE

4. Results

The results of the descriptive analysis of the syndrome of burnout using the two methodologies are described in the following sections.

4.1. Results of the Burnout scale for grades

The dimension of emotional exhaustion is a score that ranges from 0 to 30 points, with an arithmetic mean of 10.29 and a standard deviation of 6.31. The behavior of the dimension of cynicism goes from a minimum score of 0 to 30 points, with an arithmetic mean of 6.09 and a standard deviation of 5.51. Finally, the dimension of professional efficiency shows a minimum score of 11 to 36, with an arithmetic mean of 28.55 and a standard deviation of 5.85.

The results indicate that middle and senior managers of the manufacturing industry are in a middle grade in the three dimensions as shown table 3. A 33.2% was located in the middle grade of emotional exhaustion, a 31.6% in the middle grade of cynicism and a 31.9% in the same grade, but in professional effectiveness.

Regarding to the reliability of the MBI-GS, all three dimension showed a value of acceptability. The dimension of emotional exhaustion got aCronbach's Alpha of 0.919, 0.814 for cynicism and 0.883 for professional effectiveness.

Table 3. Distribution of scores by Dimension

Burnout Dimension by grade	Emotional Exhaustion	Cynicism	Professional Effectiveness
Low	<=7 pts	<=3 pts	>=33 pts
Middle	8-12 pts**(10.29)**	4-7 pts**(6.09)**	28-32 pts**(28.55)**
High	>=13 pts	>=8 pts	<= 27 pts

4.2. Results for levels of Burnout

As it can see in table 4, 38.2% presents none or low levels of Burnout; however, 46.3% presents fairly and extreme Burnout and 15.5% have a middle level. Taking into account that almost half of the sample obtained scores above the middle level of burnout, is required the implementation of measures for the prevention and reduction of the syndrome.

According to the four stages of evolution of the syndrome although these are notalways well defined[30]the symptoms in each level are:

• Mild form: Includes physical, vague and nonspecific symptoms (headaches,backaches, lumbago), the affected is little bit operative.
• Moderate form: Appears insomnia, attention deficit and concentration and tendencyto self-medication.
• Severe form: Increased absenteeism, aversion to the task, cynicism, Alcoholabuse and psychotropic drugs.
• Extreme form: isolation, existential crisis, chronic depression and suicide risk.

Table 4. Distribution of the sample by levels of Burnout

Level of Burnout	Frequency	Percentage	Cumulative percentage
None	93	25.8%	25.8%
Low	45	12.5%	38.2%
Middle	56	15.5%	53.7%
Fairly	84	23.3%	77%
Extreme	83	23.0%	100%

4.3. Results for occupation and department

With regard to comparing current position with Burnoutdimensions, supervisors of the different areas were the most affected. Considering the sum of the percentage of the three grades of burnout, 36.6% of supervisors are

suffering from emotional exhaustion, cynicism and reduced professional efficacy. Subsequently, technicians 19.9%, group leaders 14.1%, administrativeoffice 13.5% and finally senior managers with 9.5%.

In terms of departments the most affected is engineering with 33.5%, production and maintenance with 31.0%, Administration (19.1%), materials (12.2%) and safety and environmental protection with a 4.2%.

5. Conclusions and recommendations

Through the analysis for grades, the entire sample obtained a middle grade of emotional exhaustion, cynicism and professional effectiveness.

By levels which allowvisualizing in a general way the Burnout syndrome, not only for its dimensions, 23% of middle and senior managers are in an extreme level and 23.3% is at levelfairly. These personnel could be showing symptoms of depression and existential crisis[30]. Now, taking into account that15.5% is at amiddle level, increase the risk of contaminating others and therefore generate significant economic impact for the industry by absenteeism, lack of attention to assigned tasks among others.This highlights the fact that indeed Mexican workers are exposed to high levels of work-related stress.Although, 38.3% is exempt from Burnout syndrome, is importantthe implementation of measures that will help to prevent or reduce its manifestation, more even if it`s presented in middle and senior managers whose physical and mental balance is critical for the industrial sector success.Now, taking in consideration the different occupations and departments in the sample, the most affected were the supervisors and the department of engineering.

Now, although the enhancers of the syndrome are different environments, taking care of the human capital must be a priority for organizations. Therefore it is recommended to give information about the syndrome, their symptoms and consequences; in the same way, design and implement leadership programs for senior managers, where they learn techniques to solve problems, self-control, and time management, in this way learn to set priorities; likewise, carry out internal promotions to the development of workers, competitive salaries, establish clear lines of authority and enhance communication at all levels.Moreover, several studies have shown that the flexible work, where employees may work outside normal business hours, or where they spend part of their working time from home, reduce employee stress, improve productivity and save money corporations[11].

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