

## **Psychosocial Factors at Work and Psychic Disorders in Workers of a Pharmaceutical Company**

Pérez Aldrete Jorge Arturo<sup>1</sup>, Aldrete Rodríguez María Guadalupe<sup>2</sup>, Aranda Beltrán Carolina<sup>3</sup> & Hernández Guzmán Berenice<sup>4</sup>

<sup>1</sup>(Occupational health. Mexican Social Security Institute)

<sup>2,3</sup>(University of Guadalajara, University Center of Health Sciences, Department of Public Health)

<sup>4</sup>(Public Health Nurse. Mexican Social Security Institute)

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### **Abstract**

**Introduction:** Labor psychosocial factors can affect health if there is an inappropriate interaction between the type and content of the work, the organizational environment and the worker's capabilities.

The objective was to determine the relationship between labor psychosocial factors and psychic disorders in workers of a pharmaceutical company.

**Material and Methods:** This is an observational, cross-sectional and analytical study, in personnel of the operational areas of a pharmaceutical company. The data were collected with the Silva Psychosocial Factors at Work instrument and the Goldberg General Health Questionnaire.

**Results:** 110 workers participated, 54% were men and 46% women. 40% perceived the presence of negative psychosocial factors at medium level, the most frequent being the labor requirements and the role of the worker. In relation to mental health, 15% were considered as a "case", the most frequent disorders were: sleep disturbances and behavior disorders. Psychosocial factors were related to anxiety and depression ( $p < 0.05$ ).

**Conclusion:** The relationship between occupational psychosocial factors and psychic disorders was confirmed.

**Key words:** Labor psychosocial factors, psychic disorders, mental health.

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### **I. INTRODUCTION**

Historically, the attention to occupational health threats has focused on the physical, chemical and environmental risks that cause most accidents and diseases (Moreno, 2011).

The vertiginous changes in the labor market, in working conditions and in business dynamics, have caused "new risks" caused by various psychosocial factors that threaten the physical, mental and emotional health of workers (Camacho, 2017). The importance of these has been increasingly recognized, which has led to an increase and deepening of the issue (Moreno, 2010).

Since 1974, the Member States of the World Health Organization (WHO) talked about these factors in relation to mental health and human development (Raija, 1988). Caplan and Collaborators since 1975 (cited in the report of the joint ILO / WHO committee in 1984) considered the existence of unfavorable psychosocial factors of professional origin and defined them as characteristics of the work environment that created a threat to the individual.

More recently, there are three ways to refer to psychosocial aspects: as psychosocial factors, psychosocial risk factors and psychosocial risks. The first are descriptive, they refer to the organizational structure, the psychosocial conditions of work such as corporate culture, work environment, leadership style or job design (Moreno, 2014), factors that, as such, may be positive or negative about the activity and the quality of work life of people, being positive they encourage the personal development of individuals, while when they are unfavorable they harm their health and well-being (Gil Monte, 2012). The latter are predictive, and act as triggers of work stress and stress (Moreno, 2014), and as psychosocial risks, psychosocial factors are likely factors of damage to health, are always negative and can affect both health physical as well as psychological, (Moreno, 2011).

Officially, one of the first references of the subject, appears in 1984 in the document "Psychosocial factors at work: recognition and control", it is considered that "psychosocial factors at work are difficult to understand, since they represent the set of perceptions and experiences of the worker". The definition of these factors is the one referred by the International Labor Organization (ILO) that serves as a starting point for its study, it is understood that: "Psychosocial factors at work consist of interactions between work, its environment, the satisfaction in the work and the conditions of the organization, on the one hand, and on the other, in the

abilities of the worker, his needs, his culture and his personal situation outside the work, all of which through perceptions and experiences it can influence health, performance and job satisfaction” (ILO, 1984).

In Mexico, the need to legislate on this issue was seen in order to be in accordance with international policies and for this reason, in 2018 the NOM-035-STPS-2018 is presented (Official Journal of the Federation, 2018).

The other point to be discussed in this document is that related to mental health; for Gómez & Calderón (2017), mental health is a state of well-being in which the person is able to cope with the usual stress of life, is able to work and contribute to their community and this is essential to interact with. In addition, earning a living and enjoying life, meanwhile, Aldrete et.al. (2009), mention that in all activities there are people who will start their personal pathology determining their form of labor intercession. But it is satisfaction, the meaning of a life project that can help to harm people's mental health. On the other hand, psychic disorders for Halgin & Whitbourne (2009), are a clinically significant behavioral or psychological syndrome or pattern, which occurs in an individual and is associated with a disturbance or disability or with a significant risk of dying, of suffering pain or a significant loss of reality.

Now, there are endless psychic disorders, for the present investigation the pictures of depression, anxiety, psychosomatic disorders, and social dysfunction and sleep disorders were taken, which are alterations that are not highly disabling, such as those in which there is a loss of contact with reality (DSM-IV-TR, 2000).

Mental health can be considered an insufficiently studied area, especially in relation to psychosocial factors, partly because the same mental health has been poorly documented in research papers and most of these are exclusively in cases of mental disorders nosologically diagnosed (Moreno, 2014). On the other hand, in our country recently there are legal obligations for the protection of workers against labor psychosocial factors. Hence the importance of identifying as a central objective of this work the relationship between labor psychosocial factors and psychic disorders in workers of a pharmaceutical company located in the metropolitan area of Guadalajara.

## II. MATERIAL AND METHODS

**Type of study:** An observational, cross-sectional and analytical study was carried out on personnel in the production and maintenance areas of a pharmaceutical company.

**Population and sample:** The study included all those workers who had more than 1 year in the company because they were stable at work and exposed to different psychosocial factors in the work area, 110 participants were selected by simple random sampling; incomplete surveys were removed.

**Evaluation instruments:** The data collection instruments were a self-administered questionnaire that contained three sections: the first one integrated with the sociodemographic and labor variables, the second by the scale of Psychosocial Factors in the Academic Work of Silva Gutiérrez, which has 7 Likert-type subscales, which ranges from 0 (never) to 4 (always) and evaluates: Workplace conditions, workload, content and characteristics of the task, labor requirements, worker's role, social interaction and organizational aspects, performance compensation. For their evaluation, the scores were added, and the following levels were considered: <55 low level, from 56 - 121 medium and from 122 to 184 high. The scores that correspond to high and medium levels are considered as indicators of the presence of negative psychosocial factors at work. This instrument has an average reliability between the factors with a Cronbach Alpha of 0.8817, so we can assume that it has a construct validity and acceptable internal reliability (Silva, 2006).

The third instrument used was the Goldberg General Health Questionnaire –GHQ-30, standardized version Lobo M. (1996) is a suitable instrument for the evaluation of the general state of health and personal well-being, especially in psychological aspects, and the initial screening of psychopathology. The scale is subdivided into 5 factors: psychosomatic symptoms, anxiety-depression, sleep disturbances, behavior and interpersonal relationships (García. 1999). For its evaluation a point was assigned for columns 3 or 4 (it can be any value); and 0 points for columns 1 and 2 (can be any value). Columns 3 and 4 are added in the qualification, 1 and 2 are omitted. In the score 7/8 was taken as the optimum cut-off point to be considered as a “case” or probable psychological disorder (sensitivity of 77% and specificity 90% (from the Smoked Magazine, 2004) this instrument has an internal consistency with a Cronbach's Alpha coefficient of 0.97 (Godoy, 2002).

**Process:** The application of the data collection instruments was carried out within the work areas, in the space allocated by the directors of the institution and in the time established by the same company in order not to interrupt the work for a long time.

**Ethical considerations:** Participants were informed about the objectives of the investigation, emphasizing that their participation was confidential, anonymous and voluntary and that it did not represent any risk to them, while obtaining their consent orally. The instruments were applied with the consent of the directors of the institution. In accordance with the Regulations of the Secretary of Health of the State of Jalisco and the General Health Law on research in its Title II of the ethical aspects of research with human beings in its article 17 this investigation is considered without risk.

**Statistical analysis:** For the statistical analysis of the data, the type of variable was considered: For the socio-labor variables of quantitative type, measures of central tendency (average) and dispersion measures were obtained, in those of qualitative type absolute and relative frequencies were obtained. Descriptive analyzes were carried out to assess the prevalence of psychosocial factors in workers. To find the relationship between occupational psychosocial factors and psychic disorders, Chi Square was used in which an association with a value of  $p < 0.05$  was used, a confidence interval (CI) that did not include the unit, and an OR  $> 1$ .

### III. RESULTS

The sample consisted of a total of 110 workers with an age range between 20 and 58 years, an average of 34.3 years ( $\pm 8.609$ ), of which 54% (59) are men and 46% (51) women, 42.7% were married, in terms of schooling 33.6% had finished high school and 28.2 had a bachelor's degree (Table 1).

**Table 1.** Sociodemographic characteristics of the workers of a pharmaceutical company

Variable	Frequency	%	
Gender	Male	59	59
	Female	46	51
Marital status	Married	47	42.7
	Single	42	38.2
	Free union	9	8.2
	Separated	8	7.3
	Divorced	3	2.7
	Widower	1	0.9
	Primary	3	2.7
Scholarship	Secondary	37	33.6
	High School	18	16.4
	Technical career	16	14.6
	Bachelor's degree	31	28.2
	Specialty	5	4.5
Age	Range: 20-58 years Average 34.3 ( $\pm 8.609$ )		

Source: Survey data

84.5% (93) of the workers had a permanent contract, with an age range of 1 to 23 years, an average of 6.6 years ( $\pm 5.462$ ) working for the institution. The average age in their work area was 6 years ( $\pm 4.795$ ), with a range of 1 to 22 years, 62% worked in the morning shift (Table 2).

**Table 2.** Labor characteristics of the workers of a pharmaceutical company

Variable	Frequency	%	
Contractual condition	Permanent	93	84.5
	Personal of trust	13	11.8
	Eventual	4	3.6
Turn	Morning	68	61.8
	Evening	4	3.6
	Night	2	1.8
	Rotary	36	32.7
	Operational	40	36.4
	Technical	8	7.3
	Administrative	8	7.3
Stall	Professional	16	14.5
	Supervisor	7	6.4
	Maintenance	18	16.4
	Intendance	13	11.8

Age in the company

Average: 6.6 years ( $\pm 5.462$ ), range of 1 to 23 years

Seniority in the job position

Average: 6 years ( $\pm 4.795$ ), range of 1 to 22 years

Source: Survey data

The results of the workers' perception of psychosocial factors in general are mainly at the low level with 60% (66), and 40% (44) at the medium level. According to the different areas that make up the instrument used for the evaluation of psychosocial factors, it was observed that 26.4% (29) of the workers perceive labor demands at a high level, followed by 56.4% (62) at the medium level, 47.3% of the respondents perceive the workload at the medium level, the area that evaluates the role of the worker and career development 45.5% of the workers perceive it at the middle level and 8.2% at the high level (Table 3).

**Table 3.** Perception of workers on the presence of Psychosocial Factors according to the scale of Psychosocial Factors at Work by Silva Gutiérrez

SUBSCALES	LOW		MEDIUM		HIGH	
	Fq.	%	Fq.	%	Fq.	%
	1.- Workplace conditions	66	60.0	44	40.0	-
2.- Workload	58	52.7	52	47.3	-	-
3.- Content and characteristics of the task	62	56.4	46	41.8	2	1.8
4.- Labor requirements	19	17.3	62	56.4	29	26.4
5.- Role of the worker and career development	51	46.4	50	45.5	9	8.2
6.- Social interaction and organizational aspects	89	80.9	19	17.3	2	1.8
7.- Performance compensation	83	75.5	24	21.8	3	2.7
Total of Psychosocial Factors	66	60.0	44	40.0	-	-

Source: Survey data

Note: Fq - frequency

- Spaces without data

Regarding the psychic disorders evaluated through the Goldberg General Health Questionnaire, it was found that 85% (93) of the participants belong to the “no case” group, which means that they do not present psychic symptoms, while the 15% (17) of the workers correspond to the “case” group, if they manifest psychic symptoms.

Considering the results according to the subscales of the Questionnaire, the main psychic disorders that workers present are: sleep disturbances with 61.8% (68), as well as behavioral disturbances with 56.4% (62) (Table 4).

**Table 4.** Psychological Disorders of Workers of a pharmaceutical company according to Goldberg General Health Questionnaire (GHQ-30)

Disorders	CASE		NO CASE	
	Fq	%	Fq	%
Somatic symptoms	50	45.5	60	54.5
Sleep disturbances	68	61.8	42	38.2
Behavioral disturbances	62	56.4	48	43.6
Relationships	46	41.8	64	58.2
Anxiety and severe depression	22	20.00	88	80.0

Source: survey data

Note: cut 7/8 = case of psychological disorder

The analysis of the association between the results of the Goldberg instrument considering as “case” risk and high and medium psychosocial factors, statistical significance was found regarding the role of the worker and career development with an OR = 4.978 , (CI of 1.341 – 18.478 and P = 0.010) (Table 5).

**Table 5.** Relationship between “case” and “no case” according to the results of the GHQ-30 and the presence of psychosocial factors in Silva Gutiérrez's work

Psychosocial Factors	OR	CI LOWER	CI HIGHER	P
Workplace conditions.	1.864	0.658	5.278	0.236
Workload.	1.735	0.608	4.951	0.300
Content and characteristics of	2.068	0.723	5.913	0.170

the task.

Labor requirements.	1.678	0.350	8.034	0.514
Role of the worker and career development.	4.978	1.341	18.478	0.010
Social interaction and organizational aspects.	2.005	0.620	6.487	0.239
Performance compensation.	1.345	0.427	4.237	0.612
<b>TOTAL PSYCHOSOCIAL FACTORS</b>	<b>2.479</b>	<b>0.864</b>	<b>7.113</b>	<b>0.085</b>

Source: survey data

Note: significant data with values of OR > 1, CI not including the unit. p < .05

The relationship between psychosocial factors and psychic symptoms is that anxiety and severe depression show significant values with an OR 2.656, (CI of 1.021 – 6.908 and a P = 0.041), workers who perceive negative psychosocial factors manifest mainly this variant of psychic disorders (Table 6).

**Table 6.** Relationship between the sub-scales of the GHQ and the presence of psychosocial factors in the work of SILVA Gutiérrez

Psychic symptomatology	OR	CI LOWER	CI HIGHER	P
Somatic symptoms	1.846	0.853	3.995	0.118
Sleep disturbance	1.135	0.517	2.502	0.749
Alterations of behavior.	1.933	0.879	4.253	0.099
Interpersonal relation	1.497	0.691	3.243	0.305
Anxiety and severe depression.	2.656	1.021	6.908	0.041

Source: survey data

Note: specific data with values of OR > 1, CI not specific to the unit and p < .05

#### IV. DISCUSSION

The psychosocial factors found in the workplace are very broad and range from aspects of the organization and work system to those of human relations in the company, these interact and impact on the health of workers, a situation that is could verify in the present investigation.

Regarding psychosocial factors, Aranda and Ibarra (2014) reported a global prevalence of 58% negative psychosocial factors in operating personnel of an electronics company, data higher than in the present study in which 40% of the population studied perceives them in the middle level; minor data were reported by Gallegos et al (2009), in their study 20.3% perceive psychosocial factors as high.

Of the psychosocial factors studied, labor demands, workload and the role played by the worker and the development of his career, are the three negative factors that were presented most frequently, coinciding with what was reported by Aranda (2014).

The role played by the worker and the development of his career was related to psychological disorders, coinciding with the explanation presented by the European Agency for Safety and Health at work (2016), where aspects such as the lack of clarity of job functions; the lack of participation in decision-making, the lack of mastery in the way in which the work is carried out, and the problems of career development, among others, are risk factors for the presence of psychological disorders such as emotional exhaustion and depression.

In the present study The labor demands were not related to the psychological disorders analyzed, different situation refers Luna and Martínez (2005), in their report of workers of the pharmaceutical industry,

they found that the labor demands are important for the presentation of disorders in the workers' health such as sleep disorders, psychosomatic disorders, anxiety, tension headache, among others.

The work environment and the way in which work is organized and managed can influence the mental health of employees. The work is beneficial for mental health, because it can provide a greater sense of social inclusion, status and identity and provide a temporary structure, but it can also be negative, it has been observed that many of the psychosocial risk factors in the workplace increase the risk of anxiety, depression and exhaustion, as found in this research where depression occurred in 20% of the participants and this was related to psychosocial fatigue, minor data on depression reports Lorca (2018), 10.5% and considers that of the mental disorders the major depressive disorder is the one with the highest prevalence.

Llorca (2018) reports that approximately 9% of the population suffers from some type of mental health related disorder; in the present study, greater data were reported, 15% of the workers were described as "yes cases" of mental health disorders, coinciding with the study by Flores (2012) in academic workers. Minor data (11.1%) reports Amezcua (2011) in its study with teaching professionals who worked with students with special educational needs. Older data is obtained by Morales-Carmona (2002) in patients with obstetric conditions where 62.2% were classified as "case" and in women with gynecological conditions 52.1% were found to be a probable "case".

It is estimated that depression will soon be the main cause of sick leave in Europe. In our country in 2017, 32 million people aged 12 and over reported having experienced feelings of depression, this is equivalent to 32.5% of the population of that age group (INEGI, 2018), data greater than those found in the present study. Depression can be considered a public health problem that affects the general population, causes high disability and interferes decisively and intensely in personal, professional and social life. Evans-Lacko and Knapp (2017) mention that 0.1% and 4.9% of the Gross Domestic Product (GDP) was lost due to absenteeism and presentism linked to depression, they argue that this is a mental disorder that occurs in the workers of all countries and cultures, and that has an impact in absolute monetary terms in relation to the proportion of the general economic production of a country, which is why it should be considered as a global problem.

Insomnia is one of the most frequent psychic disorders, it is estimated that between 10 and 30% of the population has suffered from transient insomnia, but this problem can occur in up to 80% of the population at least once in life (Carrillo, 2018). The Golberg General Health questionnaire used in this research allowed identifying the existence of sleep disorders in 61.8% of the participants. Similar data (61%) to those reported by Durand (2004) in the employees of a company producing soft drinks. Minor data report Pando and Aranda (2001) in older adults (33.3%) and Luna and Martínez (2005) with only 10% in the study population, sleep disorders are considered to be an important predictor of mental fatigue at work Vieco (2014).

In this study, 56.4% of the participants presented behavioral problems, similar data (54.3%) to those reported by Tiemi-Murofose&Palucci-Marziale (2005) in nursing workers of health institutions in Brazil, in their study the Authors believe that 40.8% of diagnoses are linked to conditions that are legally considered occupational diseases. Llorca Rubio (2018) considers that the presence in a workplace of a person who presents a behavioral alteration, even if it is not of sufficient intensity to generate an urgent intervention or require a temporary disability, if it can, at any given time, alter the normal functioning of the work environment by generating a climate of uncertainty and concern among colleagues and managers who tend to value these behaviors as "dangerous"

Several investigations have shown that a large part of mental disorders can be diagnosed and treated as effectively as other medical illnesses (Mingote, 2011). The European Agency for Safety and Health at Work (. FACTS-102) mentions that investing in mental health and the well-being of workers brings benefits to companies such as an increase in performance and productivity so it is transcendental prevention aimed at improving the quality of working conditions, and communication skills and control of labor demands, at the same time implementing programs that develop skills and abilities in workers for the management and control of psychosocial factors to minimize health effects.

It has been visualized that employers' initiatives are not enough to counteract mental illness caused or aggravated by work, it is necessary to establish policies that involve the direct participation of workers since these problems should be treated as a health issue public, so that interventions are structured that can address, in depth, the causes of the problem (Bernardo, 2015).

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