




RELATIONSHIP BETWEEN THE BURNOUT SYNDROME AND HYPERTENSION IN FIREFIGHTERS FROM MEXICO CITY, D.F.

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WHAT IS BURNOUT?


Because the null coping or maladjustment of workers to the demands of their psychosocial factors at work, there is Syndrome Burnout by the work how the response individual physiopatologic to the chronic job stress.

It has three dimensions:

- Reduced personal accomplishment at work
- High emotional distress or mental
- Depersonalization (misconduct);
- Feelings of guilt.


1 Type: 3 first dimensions.

2 Type: 3 dimensions, plus guilt.




RELATIONSHIP STRESS-SQT-EFFECTS

According to Gil-Monte (2005) burnout is integrated into the relationship between psychosocial risk factors and chronic job stress, under the following scheme:



CAUSES OF BURNOUT

- 1.- Factors in the social environment of the organization**
 - Work overload or changes in the way of work
- 2.- Physical-technological organizational factors**
 - Job insecurity or poor remuneration.
- 3.- Social-interpersonal organizational factors**
 - ❖ Poor teamwork or interpersonal conflicts
 - ❖ Destructive competition or role ambiguity.
- 4.- Personal history of members of the organization**
 - Sex, age (professional inexperience), marital status, seniority, negative affectivity, perfectionism.



INDIVIDUAL CONSEQUENCES:

Emotions	Attitudes	Psychosomatics
Feelings of loneliness Anxiety Feelings of helplessness Culpability Frustration	Isolation Cynicism or apathy Hostility or aggressiveness Irritability Auto negativity Alcohol and drugs	Chest pain or palpitations Hypertension Musculoskeletal pain Chronic fatigue or insomnia Change of weight Increase of cholesterol, glucose, or triglycerides, etc.

ORGANIZATIONAL SYMPTOMS:

Emotionals	Cognitive	Behaviorals	Social
Irritation. Apathy. Disappointment Pessimism. Hostility. Zero tolerance. Charges.	Loss of values. No expectations. Loss of self-esteem Loss of creativity. Distraction. Cynicism. Generalized criticism.	Avoidance of responsibility Absenteeism, resignation Impairment Self sabotage Disorganization. Avoidance decisions. Addictions.	Isolation and feelings of failure. Interpersonal conflicts. Avoidance training.

WHAT IS HTA?


Hypertension is a chronic disease of unknown etiology multifactorial, characterized by sustained increase in systolic pressure ≥ 140 mmHg and diastolic pressure ≥ 90 mmHg.

TYPE:

The essential or multifactorial origin:
Hereditary history of hypertension
Overweight, obesity,
Mental stress or smoking
High intake of sodium and low potassium

The secondary or associated with other causes:
Chronic renal failure
Primary aldosteronism
Thyroid disease or parathyroid
Therapy c / steroids or Sx Cushing.

CLASIFICACION:	STAGE
CLASIFICACION:	Stage 1: 140-159 / 90-99 mm de Hg
	Stage 2: 160-179 / 100-109 mm de Hg
	Stage 3: ≥ 180 / ≥ 110 mm de Hg



SQT – HYPERTENSION ASOCIATION

The possible pathways connecting the SQT with Hypertension are:

- Deregulation of the hypothalamic-pituitary-adrenal (HPA).
- Inflammation and immunity disorders.
- Blood clotting disorders (for alteration of fibrinogen).
- Sleep disturbances.



PATHOPHYSIOLOGY SQT-HYPERTENSION

Inflammatory cytokines involved (TNF, IL-1 and 6) cause stimulation of the HPA axis, even anxiety or drowsiness affecting the Central Nervous System.

After activating tissue inflammation is the acute phase due to CRP, serum amyloid A and ceruloplasmin. But in turn decreases albumin causing poor transportation and bad inhibition of production of corticosteroids.

And because norepinephrine also induces an acute phase response, favors the origin of the SQT-HTA.

OBJETIVE

To determine the association between the presence of burnout and the development of hypertension, also the cardiovascular risk in Firefighters from Mexico City



METHODOLOGY

This is an analytical, cross-sectional correlation, which makes the measurement of psychosocial variables and biological on firefighters.

The study has total sample of 181 workers, fireman from 6 stations and clerical and general services personnel.



VARIABLES

TYPE	VARIABLES	OPERATIONALIZATION
Independent	SQT o Burnout	C E S Q T
Dependent	Hypertension	Diagnosis of hypertension with pressure tap at least 2 different days, using digital Blood Pressure.
Dependent	Cardiovascular Risk	Framingham Index
Confusión	BMI	Weight and height measurements, using tilts and measuring tape.
Confusión	Total Cholesterol and HDL	Take fasting blood sample.
Confusión	Diabetes and Smoking	C E S Q T
Confusión	Sex, Age, Age of Labor.	C E S Q T

METHODOLOGY

Instruments:

- CESQT (searching and pains associated demographics of burnout). 1st day application.
- Measurement of anthropometric variables or weight, height
- Measurement of blood pressure (three consecutive measurements) in two different days.
- Blood samples to measure blood lipids.

Statistical analysis:

- By SPSS 19, using Chi2



RESULTS

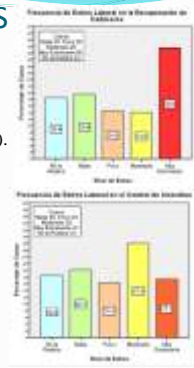
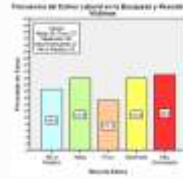
Sociodemographic Characteristics and Employment of firefighters:

CHARACTERISTICS	RESULTS
Sex	20.4% were female and 79.6% were men.
Age	66.1% are between 35 to 48 years
Job Title	79% were "firefighters" in active service, 8.8% were administrative or union, and 2.8% were secretaries.
Seniority	The 48.3% had 13 to 22 years

RESULTS

Stressful activities:

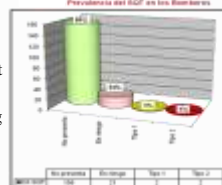
- The recovery of bodies (33.5%).
- The rescue of victims and control flammable and toxic spills (22.9%).
- The fire control (17.3%).



RESULTS

Prevalence of burnout and hypertension in firefighters:

A 2% had SQT (2 cases of burnout type 1 and 2 cases of burnout type 2). A 12% had latent risk for developing burnout.



The hypertension prevalence was 10% (with 18 positive cases). A 51% were at risk (92 pre-hypertensive).

RESULTS

Most common symptoms of hypertension in firefighters:

- Phosphenes (35.8%).
- Dizziness when changing positions or up (28.5%).
- Tinnitus (25.7%).



Moreover, the link between symptoms and prevalence of hypertension, was significant with Tinnitus (Chi² = 0.04).

Dates	No		Yes		Total
	Nº	%	Nº	%	
DX HTA	9	50	9*	50	18
Hyper-tensive	53	76.8	16	23.2	69
Normo-tensive	71	77.2	21	22.8	92
Prehyper-tensive	133	74.3	46	25.7	179
Total	179		104		283

No. of valid cases: 179. *Chi² = 0.04

RESULTS

Association between Burnout and Hypertension:

A significant relationship was found (p = 0.04) between the presence of burnout and high blood pressure in firefighters of D.F.

Dates	DX HTA							
	Hyper-tensive		Normo-tensive		Prehyper-tensive		Total	
	Nº	%	Nº	%	Nº	%	Nº	%
DX SQT	4	19	8	38.1	9	42.9	21	100
Normal	12	7.7	61	39.1	83	53.2	156	100
Type 1	1*	50	1	50	0	0.0	2	100
Type 2	1*	50	1	50	0	0.0	2	100
Total	18	9.9	71	39.2	92	50.8	181	100

N of cases: 181 *Fisher exact test = 0.04

RESULTS

Association between burnout dimensions and hypertension:

Both the professional disappointment (p. = 0.02) as the psychological exhaustion (p. = 0.03) confirmed a link with hypertension.

With regard to sex, were found only in men professional disappointment (p. = 0.01) are relevant to hypertension.

	DX HTA							
	Hyperten		Normotens.		Prehyperten		Total	
	Nº	%	Nº	%	Nº	%	Nº	%
Disenchant	5*	26.3	8	42.1	6	31.6	19	100
ment	13	8	63	38.9	86	53.1	162	100
Prof- SQT	18	9.9	71	39.2	92	50.8	181	100

N of valid cases: 181. *Chi² of Pearson = 0.02

	DX HTA							
	Hyper-tens		Normotens		Prehyperten		Total	
	Nº	%	Nº	%	Nº	%	Nº	%
Wear	4*	20	11	55	5	25	20	100
Physic- SQT	14	8.7	60	37.3	87	54	161	100
Total	18	9.9	71	39.2	92	50.8	181	100

N of valid cases: 181 *Chi² of Pearson = 0.03

RESULTS

Relationship among Burnout and hypertension with other risk factors:

It was found that novice workers (2 to 12 years old) are susceptible to both burnout and Hypertension ($\text{Chi}^2 = 0.02$).

Another association was total cholesterol with burnout and hypertension levels of 116 to 159 mg ($\text{Chi}^2 = 0.000$).

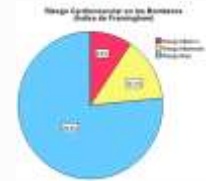
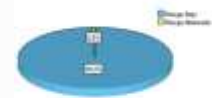
Finally the presence of obesity (by BMI) showed a positive influence ($\text{Chi}^2 = 0.03$) on hypertension and burnout.

RESULTS

Framingham Index and Mortality Risk to 10 years in the firefighters:

14.1% had moderate risk and 9.4% maximum risk of suffering a cardiovascular disorders

Riesgo de Mortalidad en los Bomberos a 10 años



0.8% presented a moderate risk. And 99.2% had a low risk mortality in 10 years.

CONCLUSIONS

- ✓ That there is a significant association between burnout and hypertension in firefighters.
- ✓ With a prevalence of 10% in those of hypertension and 2% of burnout.
- ✓ Seniority, BMI and low cholesterol levels were also associated to Burnout and hypertension.

Mexico City firefighters are exposed to chronic job stress that causes in them BO and HTA. For this reason, it is fundamental to impel in a short term preventive actions to avoid more health damages of this important group of workers.

RECOMMENDATIONS

Organizational and Individual Levels:

- Establish feedback mechanisms of the employment outcome
- Promote teamwork and peer social support at work.
- To improve communication networks and establish clear lines of authority and responsibility.
- Enable it to identify or resolve technical problems and to promote good conduct.
- Encourage the system of participatory democracy at work.
- Increasing the degree of autonomy and job control, decentralized decision-making.



AKNOWLEDGEMENTS

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THANK YOU!

Good wishes to all and happy evening.

