
**Perception of Stress at Work in the Hospital Environment in Pointe-noire,
Congo-Brazzaville.**

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Abstract

Objective: To describe the job-strain situation felt by the medical staff of hospitals in the Pointe-
Noire.

Equipment and Methods: The research was a transverse descriptive survey. A self-
questionnaire set up according to the KARASEK "demand-control-support" model had been

used to anonymously collect sociodemographic data, information on their health situation, at their workplace and identify psychosocial risk factors.

Results: of one hundred and fifty (150) medics considered, 47.02% had low decision latitude versus 52.98% with high latitude. The high psychological demand was felt by 50.33% of the medics versus 49.67% with low demand. The job-strain situation was found among 26.67% of medics. Emergency and medical departments were the most exposed with 25% and 20% of staff in a job-strain situation respectively. Low job seniority predisposed to a higher feeling of job-strain. Specialist doctors and nurses represented the most strained professional categories with 42.86% and 30.23% of the individuals concerned respectively. A statistical relation was found between job-strain on the one hand and musculoskeletal trouble and self-estimation of the impact of work on health on the other hand. Conclusion: Psychosocial risks, particularly stress, are a real concern in health institutions and this survey notes that there could be impact on medics' health in Pointe-Noire.

Keywords: psychosocial risks, job-strain, medics, Pointe-Noire.

INTRODUCTION

The major changes in the world of work in recent decades have led to emergence of new risks in the field of occupational safety and health: psychosocial risks. Along with the physical, biological and chemical risks, they appear to be major [1].

These psychosocial risks refer to many situations resulting in great confusion of causes and consequences: stress, moral harassment, violence, pain, suicide, depression, musculoskeletal problems, etc. Among all the psychosocial risks at work, stress appears quantitatively (if not qualitatively) the most important [2] because it is the most widespread health problem at work in the world and the number of people suffering from stress cases caused or made worse by work is likely to increase [1].

Stress is the body's general and nonspecific adaptation syndrome when it is under continuous aggression. Then at work, it occurs when there is an imbalance between what an employee feels the requirements he is imposed by his work environment and what he feels about his own

capacities to cope with them. In other words, job-strain is the result of interaction between the employee and his environment [3].

Health personnel are daily in with users and are subject to continuous pressures which expose them to stress [4]. In Quebec, more than 88% out of 295 of the paramedics who participated in a survey had at least one risk factor for cardiovascular disease in professionals exposed to high psychosocial risks. Likewise, this survey specified that these paramedics performing a risky work that could also affect their mental and physical health [5].

In Africa, particularly in Cameroon in a population of pharmacy employees in the city of Douala, 71.80% of employees declared to be stressed [6]. In Tunisia, 60.7% employees of the emergency department were found to be in a job strain situation [7].

But in Congo-Brazzaville, in a population of health personnel, it was found that 56.45% of them had a high risk of having a negative impact on their health in relation to overexposure to psychosocial risk factors [8] which logically resulted from the performance of this work, a survey carried out in the same population, with the aim of describing the job strain situation felt by health employees in the hospitals of Pointe-Noire.

EQUIPMENT AND METHODS OF THE SURVEY

1. Setting, type and population of the survey.

Our survey took place at the Adolphe Sicé general hospital and Netcare clinic in Pointe-Noire. We carried out a descriptive and cross-sectional survey from December 2017 to April 2018, or a period of five (5) months.

The surveyed population, recruited using an exhaustive sampling method, consisted of health care staff working in hospital emergency departments, outpatient care services and inpatient services, present at the time of the survey and who agreed to complete the questionnaire. This health care staff should have at least twenty (20) hours of work per week and twelve (12) months of effective work.

2. Methods of the survey

2.1. Procedure

In each department, the survey was managed by the supervising nurse of the department. The questionnaires were handed to all health care employees. The completed questionnaires were collected at the end of each week.

2.2. Variables of the survey

The various data for the survey were collected from a questionnaire derived from the French version of the model by Karasek and Theorell [9]. This model is interested in the measuring stress at work. It was designed by the American sociologist and psychologist Robert Karasek in 1979 [10]. It assesses the intensity of the psychological demand to which an employee is subjected, the decision-making latitude given to him and the social support he receives. Then this model makes it possible to set up a link between the experience of work and the health risks that this work poses. The part we took from this model was limited to 29 questions analyzing three major dimensions:

- a. Decision-making latitude: analyzing through questions 1 to 9 the leeways, the current use of participants' skills and the development of these skills;
- b. Psychological demand: analyzing through questions 10 to 18 the quantity–speed of the work, its intensity–complexity and its fragmentation;
- c. Social support: this is defined by the sum of hierarchical support (questions 19 to 23) and the support from colleagues (questions 24 to 29).

The answers to these questions are closed-ended according to a four-point Likert scale (1: strongly disagree; 2: disagree; 3: agree; 4: strongly agree; 5: not applicable / not concerned). This rating is used to calculate a score for each of the three dimensions. The value of the median of each of the scores is then calculated. According to this questionnaire, the job strain or “stress at work” is defined as a situation where the psychological demand is greater than the median and the decision latitude lower than the median, which is a risky situation for health. In practice, if

the psychological demand score is greater than 20 and the decision latitude score is less than 71, the employee is in the "strained" group, and therefore considered in a job strain situation.

The other variables considered were: sex, age, seniority, type of contract, sector of activity (private/public), job and department.

3. Statistical analysis

We used Graphpad Prism version 5.0.0.288 and Microsoft Excel version 8 data processing software for data processing and graphing.

The calculation of the position (median and medium) and dispersion (minimum, maximum, variance and standard deviation) parameters of the quantitative variables, as well as that of the frequencies for the qualitative variables constituted the univariate analysis of our survey.

A bivariate analysis was made by calculating P-values with the data comparison program which uses the chi² test. The p-value was set at less than 0.05 or equal to 0.05.

RESULTS

1. 1. General and socio-professional characteristics of the population

Table I summarizes all the epidemiological parameters of our surveyed population.

The age extremes were 23 and 59 years with an average age of 39.31 ± 8.13 years. The median age was 37 years old.

The Sex Ratio (F / M) was 1.1.

The average seniority was 7.53 ± 7.07 years.

2. Job strain level

2.1. Job strain in the general population

According to the values of the medians obtained in the various scores of decisional latitude and psychological demand, we divided health care employees into four groups (figure 1).

In global, low decisional latitude was found in 47.02% of health care employees versus 52.98% who had high decisional latitude. Strong psychological demand was found in 50.33% of health care employees versus 49.67% with low psychological demand.

2.2. Job strain and age

Taking age groups of our surveyed population into account, we found in a job strain situation, 18.2% of employees whose age is situated between 20 and 29, 24.4% of 30 to 39 years, 38.2% of 40 to 49 years and 21.7% of over 50 years.

2.3. Job strain et sex

Depending on gender, we found 28.2% of women in a job strain situation versus 25.4% of men ($p= 0.47843$).

2.4. Job strain and professional experience

Depending on seniority, the job strain situation was found in 75% of health whose seniority is situated between 0 and 9 years, 22.5% of those whose seniority is between 10 and 19 years, 2.5% of those with a seniority of 20-29 years and 0% of those with a seniority of more than 30 years.

2.5. Job strain in hospitals

According to the exercise in a hospital or another department, the distribution of health care employees in a job strain situation by department is available in Figure 2.

2.6. Job strain and sectors of activity

Depending on the public or private sector of activity, we found that in general, 19.1% of health care employees in the private sector were in a job strain situation versus 32.9% in the public sector ($p = 0.0569$).

2.7. Job strain and professional category

Depending on the professional category, the job strain situation was found in 30.23% of nurses, 18.2% of auxiliary employees, 20% of general practitioners, 42.86% of specialist doctors and 19% of midwives.

3. Impact of the job strain situation on the health situation of health care employees.

The impact of the job strain situation felt by health care employees in our health centers is shown in Table II.

DISCUSSION

For a population of 150 individuals, 26.67% of our workforce was in job strain. Our hospital structures therefore, operate with a quarter of the strained population. A similar situation was found by Nicolas et al who say that, 23% of his survey sample was in the "strained" group, that is to say in a situation of job strain. [11,12].

Perception of job-strain was hardly dependent on the employment status of the permanent contract, fixed term contract or temporary employee, or on the age of health care employees although we have a predominance for the population whose age was ranged between 40 and 49. No scientific explanation seems permissible and likewise the SUMER 2003 survey found no difference according to age [13].

However, we noted a perception of the job strain decrescendo in health care employees with seniority at the workplace; the less experienced employees were more strained than the older ones in the profession. This is to show that the fact that high control of work procedures and decision-making latitude are acquired over the years.

Owing to the diversity of jobs taken into account, women were represented almost proportionally to men with a sex ratio (W / M) of 1.1. Job-strain in our survey was not influenced by the distribution by gender (male/female) because the difference was not significant although 28.2% of women versus 25.4% of men were job strain situation. Surveys carried out in two different populations in the 1990s had shown that the statements related to high mental demand remained stable, around 54% in men and 57% in women. [14, 15]. Our results in terms of percentage are close to those of the SUMER survey carried out in France in 2003, which estimated the prevalence of job strain at 20% in men and 28% in women [16], but to be put into perspective because of the large difference in the size of the surveyed populations.

In the public sector, 32.9% of health care employees were in a job strain situation versus only 19.1% in the private sector, statistically without this difference. In short, in our context working in a public hospital does not expose one to job strain compared to a private health structure. Nevertheless, in general, it was noticed-private or public sector- that the emergency departments presented a greater number of employees in a job strain situation. This could be explained by the

fact that they are reception departments and therefore entry points for any patient in a critical situation. The staff of these departments frequently deals with patients in vital distress, which implies on their part a strong psychological demand for the care of this type of patient.

In our sample, specialist doctors and nurses were more subject to job strain of the respective percentages of 42.86% and 30.23%. This situation is quite understandable among nurses because of their role in carrying out medical instructions (therefore little decision-making latitude). But, among executives including specialist doctors, it was shown that they have a high degree of decision-making latitude even if their psychological demand is high. This allows them to often classify them in the active group rather than the strained ones. Therefore, the fact that there is a high percentage of specialist physicians on job strain in our results does not support many of the publications. The small size in absolute value of the specialists in our survey may bring this bias, or we should seek an explanation with other possible external factors of the working environment in these executives which could influence their psychological state.

In our survey, 82.5% of health care employees in a job strain situation answered “yes” to the question “do you think your work is degrading your health state?” This means that those who think their work is degrading their health are more likely to be in job strain. In a survey carried out in Quebec in 1998, the percentage of people in a job who showed to be in excellent general health was higher if these people could benefit from a high degree of autonomy at work [11]. Likewise, a high psychological demand for both men and women or even low decision-making autonomy for men and low social support for women are predictors of poor health [17].

Our results showed that the job strain could have a negative influence on the sleep of the surveyed employees, although the differences observed were not significant.

The scientific documents make a corollary between the “psychological” job strain felt by the employee and muscle strain. Strained employees generally present with musculoskeletal trouble related to the spine, manifested by muscle pain and joint pain [18]. In our work, 90% of health care employees in a job strain situation declared to have musculoskeletal trouble in the spine and the differences that were observed with the population of health care employees without job strain were statistically significant.

CONCLUSION

The survey on the assessment of psychosocial risks and the description of job strain situations felt by health professionals in healthcare institutions in Pointe-Noire is the first in the professional environment in our country. It enabled identify the characteristics of health care employees who may be subject to occupational stress, as well as the possible consequences on their health. Faced with this reality, improvements in the ergonomic and psychosocial field could improve the working environment of health care employees and prevent deterioration in their health, in particular by encouraging teamwork, by allowing sufficient leeway, by using the skills of adequately and involving employees in decisions regarding them.

CONFLICTS OF INTEREST

The authors declare no conflict of interest in relation to this article.

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Table I: Summary of epidemiological data

	Number	%
Age (years)		
20-29	11	7,28
30-39	81	54,30
40-49	34	22,52
50-59	24	15,89
Sex		
Male	71	47,30
Female	79	52,70
Activity area		
Public	82	54,97
Private	68	45,03
Seniority (years)		
0-9	113	75,33
10-19	28	18,67
20-29	8	5,33
>30	1	0,67
Type of Contract		
FTC *	32	21,19
PC **	85	56,95
Service provider	15	9,93
Without Contract	18	11,92
Total	150	100,00

*FTC: Fixed term contract, **PC: Permanent contract.

Table II: Impact of job strain on the health of health care employees

Impact on health		Job strain		P. value
		Yes	No	
		% (n)	% (n)	
Work degrading your health	Yes	82,5 (33)	60 (66)	0,0112
	No	17,5 (7)	40 (44)	
Sleep problems	Yes	75 (30)	58,2 (64)	0,0851
	No	25 (10)	41,8 (46)	
Musculoskeletal problems	Yes	90 (78)	70,9 (78)	0,0170
	No	10 (4)	29,1 (32)	

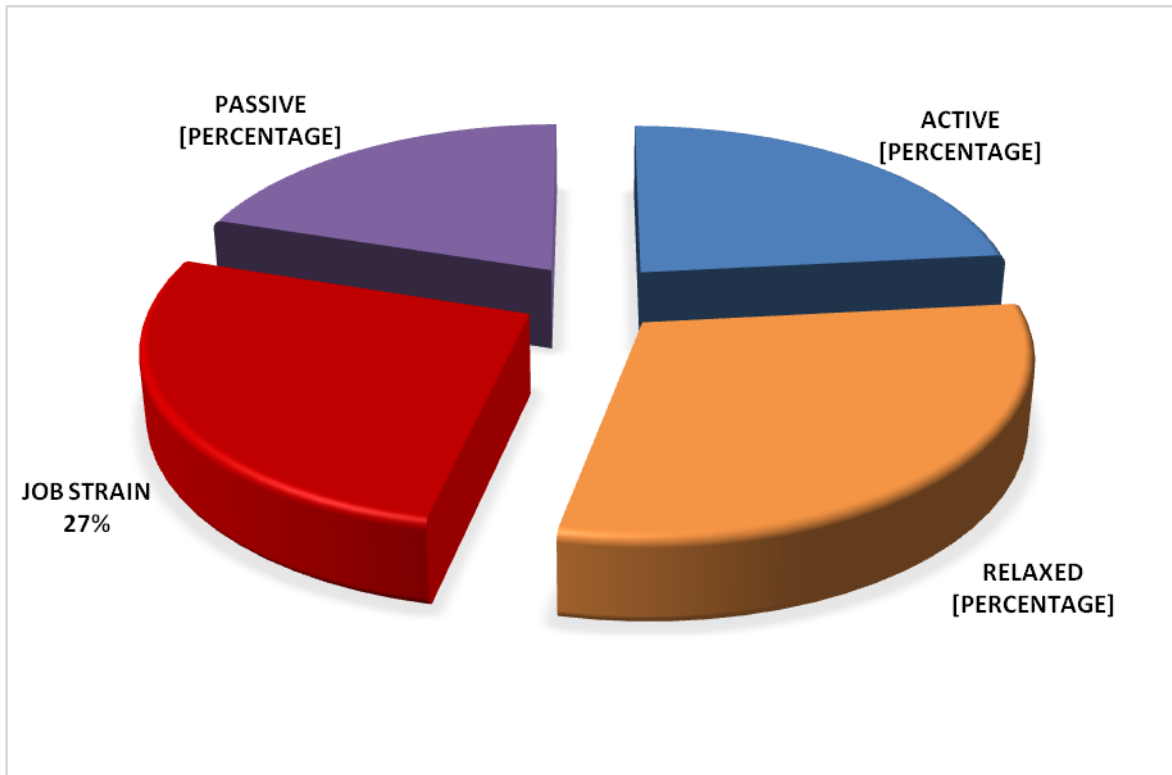


Figure 1: Distribution of job strain in the general population

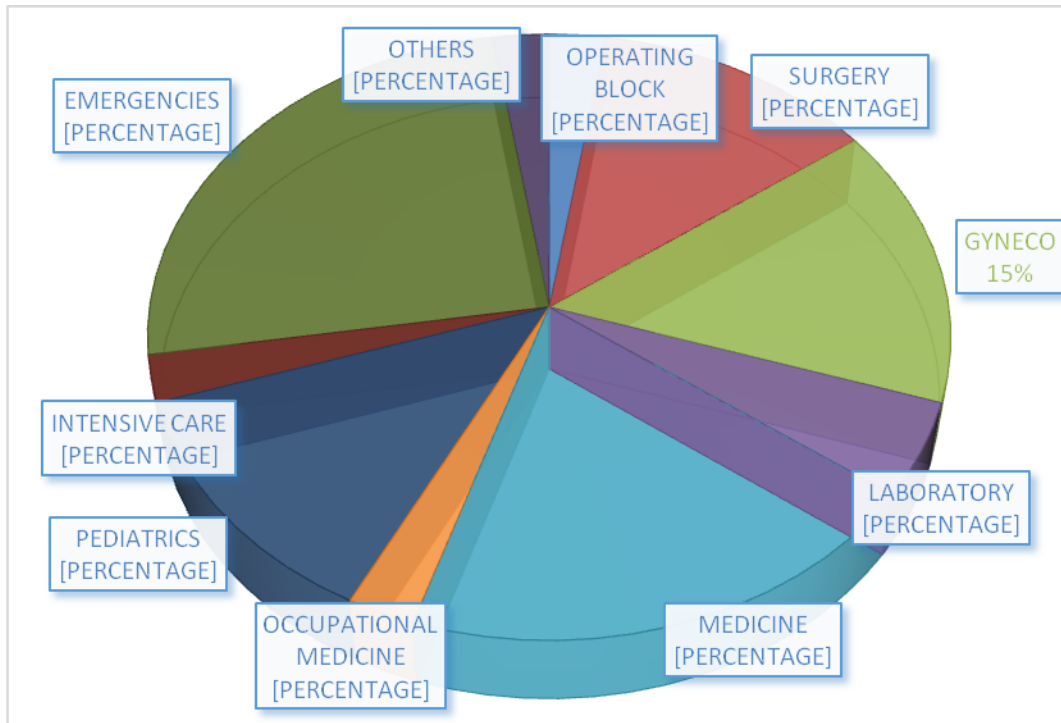


Figure 2: Distribution of health care employees in a job strain situation by department