



Assessment of Job Strain among Call Center Teleoperators in Kinshasa

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ABSTRACT

The Democratic Republic of Congo has for thirty years, five operational mobile telephonic companies. No descriptive survey was conducted to assess the real risk for mental health of Call Center workers. The main objective was to contribute to the knowledge of the characteristics of job strain among teleoperators in Kinshasa. Specific objectives were : 1) to describe the socio-demographical characteristics of Call Center workers ; 2) to identify the job strain among teleoperators ; 3) to measure the relation between job strain and work time within the Call Center ; 4) to measure association between job strain and socio-demographical characteristics. The study was conducted in five Call Center s in Kinshasa, a sample convenience of 110 people was recruited pursuant to individual consent as per the Helsinki Declaration. They were informed of terms of reference regarding their participation and the research objective. Data were collected using standardised Karasek Questionnaire French version validated by the Sumer Inquiry 2003. Spss 20 software was used to analyze data and the chi-square to measure the association between variables. This version evaluates three dimensions: psychological demand, decisional latitude and social support. One hundred and ten people were surveyed averaging 30 years. Most of them were male, university graduates and unmarried. 75.5% of participants presented job strain, 60% have spent six months or more in Call Center s. There was a significant relation between working time within Call Center s and inherent job strain. Six months was a minimum time during which psychological factors negatively impacted teleoperators' mental health. This study focused on Call Center teleoperators, demonstrated that teleoperators were affected by job strain (high psychological demands and low decisional latitude). The susceptible minimum exposure time to trigger the disease was evaluated at six months or more. Teleoperators were predominantly male, graduated, youngsters and unmarried.

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1. Introduction

The technological evolution observed in the field of cellular telephony, offers new employment opportunities in Third World countries. The Call Center is one of those services whose primary role is to process customer phone calls.

This service, although characterized by a new form of degradation of working conditions, according to Cousin, O, and Buscatto, M. (2002), has an important role in managing customer relations and marketing, business. The studies by Armistead et al. (2004), Clergeau C. et al. (2004), Menthon, S., (2000) and Sabblosky T. (2004) testify to this. In addition, other studies including Dessors, D. et al. (1979) Arnetz BB et al. (1997), May, T, et al. (2001),

Wieclaw, J. et al. (2005), Magarinô E. et al. (1999) Stansfeld et al.(2006) and Clay E., et al. (2007), which examined working conditions in Call Center s, concluded that "working conditions in Call Center s generate the stress.

For Call Centers in the city of Kinshasa, work is organized in a partitioned or collective room. The teleoperator or the employee assigned to this service, to carry out his work, he wears his helmet permanently for 8-9 hours with a

break of 15-20 minutes per day. It uses a wired or wireless phone, a computer and a computer support in a noisy environment. This noise comes mainly from the telephone conversations of his colleagues.

The customer relationship is established by speaking on the telephone. The flow of Phone Calls to be managed, the requirement to satisfy customers and listening to conversations by the supervisor put the teleoperator in a state of emotional tension. Because of the frequent dissonances between his real feelings and the calm appearance he must display with regard to his interlocutor.

Finally, it appears that the job of teleoperator in the city of Kinshasa, is exposed like that described in the literature, to an important psychological stress and generating Job Strain.

1.1 Problematic

Telephone Call Center s are booming in sub-Saharan Africa especially with delocation. Dufau, M. et al. (2002), Lechat, N. et al. (2003) and Perrier, P. et al. (2002). In the Democratic Republic of Congo in particular, these centers have existed for thirty years, but no studies have been carried out to "evaluate the daily noise exposure at the Call Center

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and his impact on the mental health of teleoperators". Planeau, V. et al. (2003).

It is now recognized in the literature that exposure to work stresses contributes to the development of mental and anxiety disorders according to Bonde (2008), Netterstrom et al (2008) and Stansfeld and Candy (2006).

The purpose of this study is to fill this gap by evaluating the Job Strain, a precursor and witness to the attainment of mental health in the Workplace. Brisson, C. et al. (1998) and Stansfeld SA et al. (1999).

1.3 Objectives

The general objective of this study is to contribute to the knowledge of the characteristics of the Job strain in the teleoperators of the telephone Call Centers in the city of Kinshasa. To achieve this, the secondary objectives will enable us to:

- Describe the socio-demographic data of teleoperators (age, sex, level of education and marital status);
- Determine the portion of the teleoperators presenting the Job strain;
- Measure the association between the voice noise exposure duration at the Call Center and the appearance of the job strain;
- Measure the association between Job strain and socio-demographic data.

2. Methodology

This is a transversal analytical study relate to 110 teleoperators working in telephone Call Center in the city of Kinshasa, capital of the Democratic Republic of Congo.

2.1 Study Population

The population of this study is made up of teleoperators from the telephone call centers. The convenience sample consists of 110 teleoperators. The inclusion criterion was worked for at least one month at the Call Center. Before participating in the study, give informed consent after the investigator's explanation of the research's terms and objectives.

Their privacy was kept secret and the confidentiality of the results was guaranteed.

2.2 Variables studied

This study assessed the socio-demographic variables: **age, sex, level of education and marital status, and Job strain and voice noise exposure duration** as a clinical variable. This has been studied as a dependent variable, while socio demographic data have been considered as independent variables.

2.3 Data collection

The data were collected using the Karasek questionnaire between January and September 2015. Each teleoperator responded by checking an answer he considered accurate. Questions were counted from 1 to 4.

2.4 Karasek Questionnaire

It is a model developed by Robert Karasek in 1979 to assess the psychosocial factors recognized as risk factors for mental health in the workplace. This model has become the main tool for assessing these factors. It consists of 26 items and evaluates 3 dimensions at work:

- Mental workload or psychological demand
- Skills and flexibility or decision latitude
- The quality of industrial relations or social support.

1. The Psychological Demand (9 questions).

It assesses the psychological burden associated with performing tasks, the amount and complexity of tasks, interrupted tasks, conflicting demands, unforeseen tasks and

constraints. The score threshold is set at 21. Niedhammer I. et al (2003).

An employee with a psychological demand score greater than 21 is subject to strong psychological demand.

2. Decision-making attitude (9 questions)

It assesses:

- the level of competence used in the work,
- the fact of being able to increase one's competence by working and - the possibility to decide and to act on the work.

The threshold of the score is set at 70. Atousanté (2016). The employee whose score is less than 70 is subject to little decision latitude.

3. Social support (8 questions)

Social support assesses relationships with colleagues and hierarchy, professional relationships and personal relationships. The threshold score is set at 24. An employee with a score below 24 is subject to low social support.

Job strain is a combination of strong psychological demand with low decision latitude. The employee whose psychological demand score is greater than 21 and the decision latitude score is less than 70, is in a Job strain situation.

2.5 Statistical analysis

The data collected was entered on the computer using the Spss 20 software. They were expressed as frequencies, mean and more or less standard deviations. Chi - square was used to measure the association between variables in an interval (CI) of 95%. The p- value of less than 0.05 was the threshold of statistical significance.

3. Results

Socio demographic data

3.1 Age

The study found that teleoperators had an average age of 30 ± 4.5 standard deviations.

3.2 Sex

The study sample was dominated by men, i.e., 70% versus 30% of women, sex ratio was 2 men / woman.

3.3 Level of Study

The majority of Teleoperators (83%) had a university degree and only 17% of Teleoperators had a baccalaureate

3.4 Civil Status

The majority of teleoperators were single (94.3%), compared to 5.7% of married couples.

3.5 Call Center Duration

Sixty per cent (60%) of teleworkers had a duration of six months or more.

3.6 Job strain

Eighty percent (80%) of Teleoperators were in the job strain situation

Table 1. Socio demographic data.

	N=53	%	Mean
Age :	53	100%	30 years
Sex :			
Male	37	70%	
Female	16	30%	
Level of Study			
Associate degree	27	51%	
Univ. Graduate	17	32%	
Baccalaureate	9	17%	
Marital status			
Married	3	6%	
Unmarried	50	94%	

This table gives information on the proportions of the different data socio-demographic characteristics: 70% for

men,30% for women,83% of academics,17% of baccalaureate, 94% of unmarried, and 6% for married couples.

Table 2. Frequencies of voice noise exposure duration in the Call Center.

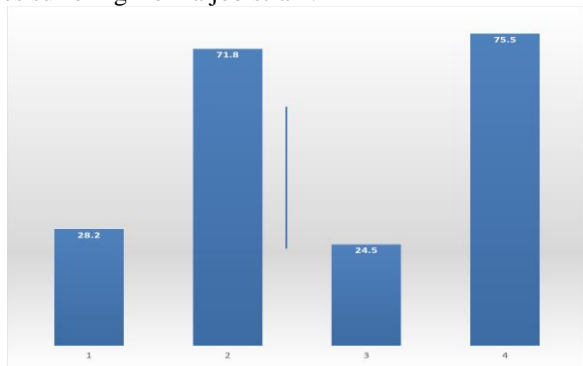
Duration	N=110	%
< 2 months	15	13.6
< 6 months	10	9.1
≥ 6 months	85	77.3

The table gives us frequencies of voice noise exposure duration at the Call Center :77.3% of teleoperators were exposed for six months or more

Table 3. Study of the association between appearance of job strain and the voice noise exposure duration at the Call Center.

Variable	N	% Job Strain	OR Gross [IC - 95%]	P- Value
Duration of exposure			405.60 [45,3632.93]	<0.001
≥ 6 months	79	98.7		
< 6 months	31	16.1		

Table 3: shows that the appearance of job strain to teleoperators at the Call Center is very significantly (p = 0.001) and very strongly associated (Odd ratio = 405.60) with the voice noise exposure duration at Call Center, at the 5% threshold. This means a subject exposed to voice noise at the Call Center for six months and over, runs the risk of 405.60 times suffering from a job strain.



GRAPH 1. Distribution of respondents according to clinical characteristics: Exposure duration at the Call Center and Job Strain.

Figure 1 shows that 71.8% of the respondents were exposed to voice-related noise at the Call Center for 6 months or more, the presence of job strain was observed at 75.5%.

Table 4. Bivariate analysis of potential factors associated with job strain.

Variable	N	% job strain	OR Gross [IC to 95%]	P-value
Age			0.39 [0.13 -1.17]	0.06
22 - 30	69	69.8		
31 - 38	41	85.4		
Sex			3.89 [1.42 -10.80]	0.4
Male	78	83.3		
Female	32	56.2		
Marital Status			0.97 [0.16 -7.49]	0.97
Unmarried	1028	75.0		
Married		75.7		
Level of Study			0.75 [0.29-1.94]	0.51
Associate Degree	51	72.5		
Univ. Graduate	59	78		
Duration of exposure			405.60[45.28-3,632.93]	0.001
≥ 6 months	79	98.7		
< 6 months	31	16.1		

The bivariate analysis of each independent variable with job strain shows that there is no change in the effect of exposure duration voice noise to Call Center and the appearance of Job Strain at the 5% threshold: age (P = 0.06), sex (p = 0.4) Marital status (p = 0.97) Level of study (p = 0.51). Moreover, the results of our analysis indicate that the voice noise exposure duration at the Call Center is significantly associated with job strain (p<0.001). The risk of suffering from job strain is higher (OR Gross = 405.60) with subjects exposed to voice noise for 6 months or more than those exposed less than 6 months.

In other words, the low exposure time protects against job strain.

Table 5. Multivariate analysis of potential factors associated with job strain.

Variable	OR Adjusted [IC - 95%]	P-value
Exposure duration	405.80 [42.80 ; 3841.17]	<0.001
Age	2.16 [0.35 ; 13.23]	0.75
Marital Status	2.45 [0.04 ; 131.22]	0.65

Considering other independent variables included in the multivariate analysis, we observe that the voice noise exposure duration to Call Center remains very significantly and strongly associated with job strain at the 5% threshold. This means that in our data series other variables do not change the effect of the voice noise exposure duration on appearance of job strain

4. Discussion

This study shows the negative role of job strain on the mental health of teleoperators in Kinshasa. A psychopathological approach to work has identified the conjunction of psychosocial, biological and environmental factors leading to chronic stress or job strain with a minimum voice noise exposure duration at the Call Center and assumptions of the non-influence about age, gender, educational level, marital status on appearance of job strain have been checked.

4.1. Age

The mean age of this study is 29 ± 4 standard deviations. This figure is confirmed in the literature by the study of INRS (2011) and that of Leferom (2011). But contrast with that of Hidri (2012) and Wikipedia (2016). It appears that the population of teleoperators in Kinshasa is mainly young for the following reasons:

The general population of the Democratic Republic of Congo is made up mainly of age groups ranging from 0 to 40 years, according to the age table 2010 contained in the Pyramid of Age published by the University of Sherbrook (2016).

Young university graduates, without taking into account their training, embark on the teleoperator job, which they consider an opportunity to escape from massive unemployment generated by the destruction of the economic fabric of the country.

4.2. Sex

The majority of the sample in this study was male. This figure contrasts with that of the literature Hidri (2012), Leferom (2012) found a female majority among teleoperators. Schooling of girls in the Democratic Republic of Congo is a plausible explanation. Indeed, according to data published by UNESCO (2012), the parity index of school enrolment between girls and boys is 0.83. It is low compared to that of sub-Saharan Africa which is 0.93. Worldwide statistics(2016) published the overall rate of 32% of enrolment of 15 years and over between girl and boy in the Democratic Republic of Congo.

Muderwa (2008) points out that the rate of admission of boys to the secondary cycle is generally low in all the provinces of the Congo and that of girls is even lower. It is clear from all these figures that the girl's schooling suffers from discrimination in the Democratic Republic of Congo despite the UNICEF-supported awareness campaign. This may explain the male major in this study.

4.3. Level of Study

This study has identified the majority university level for teleworkers in Kinshasa is 54%. This fact contrasts with the literature data: In Senegal, the level required to exercise as a teleoperator is that of baccalaureate according to Employment Senegal (2016). The university level may favor a better adaptation to the new profession of teleoperator (which does not have a training academy) thanks to the knowledge acquired and the ability to project itself in the abstract in spite of different courses attended at university.

4.4. Marital Status

In this study, can be kept for a long time even after the studies at the beginning of the professional life due to lack of necessary guarantees allowing them to found a home.

4.5. Exposure duration to voice noise at the Call Center

This study identified 71.8% of teleworkers who had been working at least six months at the Call Centers and presented a Job Strain. However, in psychiatric practice six months refer to the notion of chronicity, which leads us to conclude that Job Strain is a state of chronic stress.

In view of this duration and the silence of the literature on this subject, the duration of six months is considered for this study as a minimum voice noise exposure duration noise at the Call Center, which can cause clinical manifestations and This title, this duration constitutes an argument for the mandatory rotation of teleoperators with a view to prevention

4.6. Job Strain or chronic stress

This study observed 75.5% of teleoperators who presented job strain. For a duration of exposure to voice noise at the Call Center of six months and more. Job strain is an expression of psychic suffering, a state of chronic stress. It is the result of a combination of strong psychological demand and low decision-making latitude in the Call Center workplace.

This is corroborated in the literature with studies of Karasek R. (1979), Guignon (2008). Job strain or state of chronic stress is likely to cause clinical manifestations related to mental health. In literature, studies such as Clay E. et al (2007), Wieclaw J. et al (2005) and Niedhammer I. et al (1998) have established the relationship between Job Strain or chronic stress and depressive symptoms. Stansfeld et al (1996) argued that chronic stress or job strain is an important risk factor for psychiatric disorders.

For this study, the voice noise exposure duration in Call Center is a major determinant of Job strain in Call Center teleoperators in Kinshasa.

5. Conclusion

At the end of the analysis of the research topic entitled "Assessment of Job Strain among teleoperators in Kinshasa, Republic Democratic of Congo".

This study has drawn following conclusions:

- Male predominance, single marital status, university level and average age of 29 ± 4 standard deviations for teleworkers in Kinshasa;
- Minimum duration of six months of exposure to voice noise at the telephone Call Center likely to have a negative impact on the mental health of teleoperators;

- Significant association between minimum six-month exposure to voice noise at the Call Center and Job Strain appearance; and
- Absence of interference in socio-demographic data on the occurrence of job strain, on the minimum duration of exposure to voice noise at the Call Center.

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