Original Research

Level of physical activity and eating behavior: Risk factors associated with sedentariness among employees of a company in the city of Kinshasa province

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Abstract. The objective is to determine the level of physical activity, eating behavior and risk factors associated with sedentariness among employees of the Multimodal Freight Management Office of Kinshasa (OGEFREM, acronym). Cross-sectional study of the 210 employees, of which 119 (56.7%) men and 91 (43.3%) women, aged 18 to 59 years were randomly selected. The level of physical activity was measured by the International Physical Activity Questionnaire (IPAQ) and the eating behavior by Three-Factor Eating Questionnaire (TFEQ-R 18). The Student's T test and Chi-square test were used to compare the variables according to level of physical activity and socio-professional status. Logistic regression was used to identify independent determinants of physical inactivity and sedentary behavior. Of the 210 questionnaires collected, 56.7% of men and 43.3% of women show that 59.5% of the study population has a low level of physical activity and 58.5% a cognitive restriction. The average values of the following parameters: Weight, BMI, Waist circumference, systolic blood pressure, diastolic blood pressure, mean arterial pressure, pulsed pressure, blood glucose, total cholesterol, triglyceride, total body fat, visceral fat and lean mass are respectively 85 ± 9.7 kg, 32.6 ± 2.9 kg/m², 99 ± 13.0 cm, 135.6 ± 17.0 mmHg, 92.1 ± 14.5 mmHg, 106.6 ± 14.3 mmHg, 43.5 ± 12.0 mmHg, 129 ± 23.9 mg / dl, 228 ± 18.7 mg / dl, 169 ± 19.5 mg / dl, 39.7 ± 10.8%, 8 ± 8.9% and 28.9 ± 9.4%. The probability of having a low level of physical activity and sedentary behavior was 5 times higher among employees spending more than three hours of time sitting on the computer (OR aj = 5.188 95% CI (1.389-7.318), p = 0.006), 3 times higher among employees over three hours of time sitting in front of the television (OR aj = 3.042 95% CI (1.155-8.012), p = 0.02), 3 times higher among employees who spent more than three hours of reading time (OR aj = 3.456 95% CI (1.294-5.677), p = 0.006 and with cognitive dietary restriction (OR aj = 3.188 95% CI (1.389-7.318), p = 0.006), cognitive dietary restriction (OR = 3.188 95% CI (1.389-7.318), p = 0.006) and also 3 times higher among employees with high socio-occupational status (OR aj = 3.57 95% CI (1.77-6.68), p <0.015). The employees of the Multimodal Freight Management Office of Kinshasa have a low level of physical activity and a cognitive food restriction. Time spent more than three hours of time on the computer increases the risk of becoming inactive and sedentary 5 times. On the other hand, the time spent more than three hours watching television and cognitive restriction as well as the high socio-professional status increases it three times and is positively associated with morphological, physiological, lipid profiles and body composition. In contrast, they are associated with a decrease in muscle mass and high density lipoprotein.

Keywords. Cognitive restriction, food behavior, physical activities, uncontrolled diet.

Introduction

Physical activity (PA) is defined by the World Health Organization (WHO) and the Physical Activity Guidelines Advisory Committee (PAGAC) as "any body movement produced by the contraction of skeletal muscles that increases energy expenditure over the expenditure of rest. PA is a complex, multidimensional behavior. For each activity the characteristics to be taken into account are context, type, duration, frequency and intensity (OMS, 2010; Beliveau & Leger, 2004). Worldwide, approximately 3.2 million deaths each year are attributable to lack of exercise. The decrease in PA occurs during adolescence and continues throughout one's life. It is linked to sedentary work, motorized

modes of transport or passive leisure activities (television, video games ...). Lack of exercise is considered the fourth leading risk factor for death worldwide (Bellocq & Cabillic, 2009). One of the main risk factors for non-communicable diseases (NCDs) is unhealthy dietary behavior, along with excess energy intake. Caloric restriction through employee-provided diets eating disorders and malnutrition (Rossner, 1992). These eating disorders are often underestimated in their severity and their impact on therapeutic possibilities (Godefroid et al., 2018). Repeated failures often lead to loss of confidence, low self-esteem, depression, and increased disease (Brownell, 1995). The framework allows to influence the behavior of a large number of employees with respect to health. People must have the opportunity to make healthy choices in their workplace to be less at risk. In addition, the cost to the employer of the morbidity attributed to non-communicable diseases is increasing rapidly. The workplace should be used to make healthy eating choices and encourage exercise (Doucet, 2004; Abrams et al., 1994). The change in lifestyle, with the increasingly sedentary nature of professional activities, the motorization of means of transport and household chores, has been accompanied by a decrease in physical expenditure of the population. However, the practice of a regular PA adapted in terms of frequency, duration, intensity and nature as well as the limitation of sedentarily, constitute with a healthy eating behavior, major factors of acquisition and maintaining a good state of health. PA is involved, as well as eating habits and behavior, in the prevention of a large number of chronic diseases (cardiovascular diseases, diabetes, obesity, cancers) (Prévention des Maladies Chroniques, 2005). Despite the scientific interest in combating physical inactivity, sedentary lifestyle and poor nutritional behavior, as well as their predisposition to chronic no communicable diseases, no study has been conducted in the African workplace, particularly in the Republic of Korea. Democratic Republic of Congo. The purpose of this paper is to determine the level of physical activity (LPA), eating behavior and risk factors associated with sedentariness among employees of the Multimodal Freight Management Office in Kinshasa, Democratic Republic of Congo.

Methods

It is a descriptive and analytical cross-sectional study, which took place from 27 November 2013 to 27 January 2014, in 13 directorates of the so-called firm, Multimodal Freight Management Office of the city of Kinshasa, capital of the Republic of Congo. This industry specializes in the multimodal transport sector. Staff do most of their work from 7:30 am to 3:00 pm while sitting on the computer.

Population and Sampling

The company's employees, regardless of their rank (command or collaboration executives and enforcement agents) were recruited on a voluntary basis by performing a simple random draw. The population known to us was 400 employees of both sexes. The calculation of the minimum sample size was based on Robert and Daryle's formula (Gamila & Dallongeville, 2003). Simple random sampling was used to build the workforce of 210 employees in our survey from the company's staff list. The inclusion criterion included being aged 18 and over and in good health, born of two Congolese parents and employed at the Multimodal Freight Office for at least one year of service. All selected participants provided informed consent prior to participating in the study.

Selection Criteria

Included in this study was any agent of the Multimodal Freight Management Board (OGEFREM acronym) who voluntarily and freely gave his informed consent to participate in the study.

Data Collection

Data collected included socio-demographic characteristics (age and sex), occupational status (command frameworks, collaborative settings and enforcement agents), eating behaviors (cognitive restriction, uncontrolled diet and emotional eating) and sedentary behaviors (setting more than three hours watching television, working on the computer and reading). The following anthropometric parameters: height in cm was measured using the Seca brand portable toe, while waist circumference (TT) in cm and hip circumference (TH) in cm by a metric tape. The morbid-mortal risks by the ratio Abdo-hip (RAH) in cm, the weight in Kg and the body composition (the total body fat, muscular mass and intra-abdominal fat) by OMRON Brand Balance Inpedancemeter BF-511 Health care Netherlands / the Netherlands (Manufacturer / City / Country). The BMI in kg / m2 was calculated by the mass (expressed

in kilograms) divided by the square of the height of the person (in meters). The following lipid parameters: HDL-C, LDC-C, CT and triglycerides were measured in employees fasting for at least 12 hours on serum by clinical laboratory biologists of MOKOLE Hospital Center of Mont Ngafula in Kinshasa using the method colorimetric enzymatic and Elitech group kits (Sées, France). The PA questionnaire used was the IPAQ in its short form in French (Kohl et al., 2012, Hagstromer, Oja & Sjostrom 2006, IPAQ, 2005). There are three sections on high intensity PA, moderate intensity PA and low intensity PA, and four types respectively, PA, work, leisure, where employees must specify the number of days per week and the duration of each of these types of activities. It also includes a question about sedentary behavior with questions about the average time spent usually seated daily in sedentary occupations, namely television, computer or video games and reading. Information on the motivations and factors limiting the practice of PA has also been requested (Sjöström et al., 2006; Kohl et al., 2012; IPAQ Research Committee, 2005). To diagnose eating behavior, we used the questionnaire TFEQ-R 18 (Three-Factor Eating Questionnaire) with 18 questions (Ozen et al., 2011). It explores common dietary practices and evaluates three types of eating behavior (Coste, 2006): Cognitive restriction is defined as the tendency to consciously limit food intake to be in good health. It is a voluntary constraint on eating behavior. This restriction is a deliberate choice whose purpose is weight control. The modalities of inhibition of food intake are variable (skipped meals, low calorie diets, fasting), as well as possible health control behaviors (Ginsberg & Stalenhoef, 2003). Uncontrolled feeding includes food compulsion and bulimic access. Food compulsion is characterized by the impulsive, sudden consumption of a given food, apart from a meal. In its most common form, the simple compulsion is triggered by a desire to eat and not by a feeling of hunger, and turns towards a food or a group of foods that are appreciated and characteristic for the same subject. Bulimic access is defined by episodes in which the subject, usually alone, consumes, without hunger and with gluttony of important foods. This ingestion takes place beyond any satiety, with no other limit than the gastric capacity of the subject (Ginsberg & Stalenhoef, 2003). Emotional eating is the ability to eat too much in relation to a negative or positive feeling when the individual feels anxious, depressed alone or happy (Ginsberg & Stalenhoef, 2003). PA was measured

after 5 minutes of relaxation in position sitting on the left arm carried at the level of the heart using a mercury sphygmomanometer; three consecutive doses in one minute interval were performed and their mean defined the PA of the patient. PAS and PAD corresponded respectively to Korotkoff sounds I and V. Poor body composition was defined as total body fat ^{3} 20% in men and ^{3} 32% in women, intra-abdominal fat (visceral)> 9% in men and women and lean mass (Muscular) $\leq$ 33.3% for men and ^{3} to 24.4% for women (Browning et al., 2010). The metabolic syndrome was defined according to the US National Cholesterol Education Program (NCEP-ATPIII, 2001), by the presence of 3 or more of the following risk factors: waist circumference $\geq$ 94 cm in men and 80 cm in women; Arterial pressure $\geq$ 130 / 85 mmHg; Triglycerides $\geq$ 150 mg / dl; HDL cholesterol < 40 mg / dl in men, < 50 mg / dl in women; Fasting blood glucose $\geq$ 110 g / l (Godefroid et al., 2018).

Statistical Analyzes

The study data was encoded on Excel 2010 and analyzed on the SPSS 21.0 software. The data are expressed as mean ± standard deviation (SD) for normally distributed and median continuous variables (Interquartile Space, EIQ) for non-normally distributed variables. The qualitative variables are expressed as absolute frequency (relative frequency in percent). Student's t-test was used to compare the averages of 2 groups; the Mann Whitney U test was used to compare the medians of 2 groups. The comparison of proportions was made using the Chi square test. Independent determinants of physical inactivity and sedentary lifestyles were identified using logistic regression, $p < 0.05$ defining the statistical significance threshold.

The protocol of the study was submitted and approved by the Ethics Committee of the Ministry of Public Health of the Democratic Republic of Congo. Respect for the Helsinki principles for research on humans has been respected and the free and informed consent of the participants has been obtained.

Results

The overall frequency of PA level of employees of the Multimodal Freight Management Office is shown in Figure 1.

Figure 1 shows that the majority of the study population has a low level of physical activity

(59.5%). Intense PA is found in 15.7% of employees while it is moderate in 24.8%. The overall incidence of food behaviors for employees of the Multimodal Freight Management Office is shown in Figure 2.
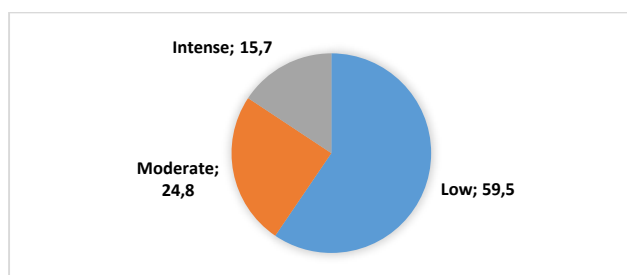

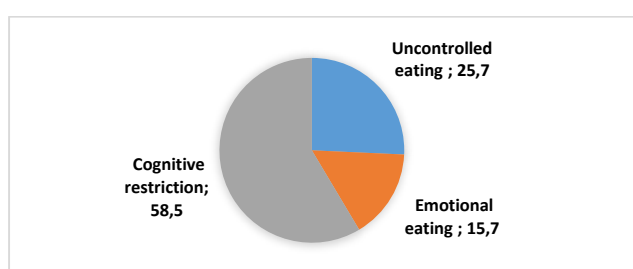**Figure 1.** Distribution of study population by level of PA.

Figure 2. Distribution of the study population according to eating behavior.

Figure 2 shows that cognitive restriction is found in 58.5% of employees, 25.7% uncontrolled eating and 15.7% in emotional eating. Socio-demographic characteristics by socio-occupational status of employees are presented in Table 1.

The mean age of employees was 45.1 ± 8.9 years. The age of over 40 years predominated with 78.6%.

The male sex was more represented with a frequency of 56.7% and a sex ratio H / F of Comparatively between different socio-professional categories, we noted a significant difference between the level of physical activity (p = 0.002), age (p = 0.012) and sex (p = 0.003). Depending on the type of PA, motivations, limiting factors, and employee eating behaviors are shown in Table 2.

The type of PA that was frequently found among employees was work (47.6%) and leisure with command executives predominating (24.3%). The dietary behavior observed in command cadres was more cognitive restriction (31.4%) and uncontrolled diet (16.7%) while emotional eating accounted for 11.4%. This socio-professional category remains, compared to the other two, more than three hours sitting on the computer (40.4%) and watching television (13.3%). The frequencies of physical activity level and mean plus or minus standard deviation of clinical parameters as a function of nutritional status are presented in Table 3.

The level of low PA was significantly higher in obese (46.1% vs. 2.8% than in normal-weight, p = 0.0001). The frequency of overweight and obesity was significantly higher high if total body fat, visceral fat were very high (p = 0.0001). Decreased lean or muscle mass (p = 0.0001) increased the rate of overweight and obesity. If the agent became more and more inactive, the rate of overweight and obesity increased significantly with the level of PA. The cardiovascular risk factors related to the metabolic syndrome as a function of the level of PA are presented in Table 4.

Table 1

Socio-demographic characteristics by socio-professional status (f (%); Mean ± SD).

Variables		Entire group n = 210)	Commanders (n = 125)	Frames collaborators (n = 52)	Executives (n = 33)	p
LPA						
	Low	125 (59.5%)	71 (33.8%)	24 (11.4%)	15 (7.1%)	
	Moderate	52 (24.8%)	33 (15.7%)	21 (10%)	5 (2.3%)	0.002
	Intense	33 (15.7%)	21 (10%)	7 (3.3%)	13 (6.2%)	
Age		45.1 ± 8,9	46.9 ± 9.4	44.8 ± 8.2	43.6 ± 13.6	
	< 40 years old	45 (21.4%)	28 (13.3%)	8 (3.8%)	9 (9%)	0.012
	≥ 40 years	165 (78.6%)	97 (46.2%)	44 (21%)	24 (11.4%)	
Sex						
	Male	119 (56.7%)	76 (36.2%)	29 (13.8%)	14 (6.7%)	0.003
	Female	91 (43.3%)	49 (23.3%)	23 (11%)	19 (9%)	

Table 2

Type of physical activity, limiting factors of physical activities (PA), eating and sedentary behavior according to socio-professional status (f (%)).

Variables	Entire group (n = 210)	Commanders (n = 125)	Frames Collaborators (n = 52)	Executives (n = 33)	p
TPA Low of	100 (47.6)	51 (24.3)	32 (15.2)	17 (8.1)	0.004
Work	49 (23.3)	34(16.2)	9(4.3)	6 (2.8)	
Leisure	61 (29)	40(19)	11(5.2)	10 (4.7)	
Shifting	47 (22.3)	35(16.7)	7(3.3)	5 (2.3)	
Powered	14 (6.6)	5(2.3)	4(1.9)	5 (2.3)	
Factors Limited					
Problem of Lack Time	118 (56.1)	54 (25.7)	53 (25.2)	11 (5.2)	0.006
Not Want	9 (4.3)	2 (1)	4 (1.9)	3 (1.4)	
Health Problem	33 (15.7)	16 (7.6)	9 (4.3)	8 (3.8)	
Work Problem	50 (23.8)	20 (9.5)	13 (6.2)	17 (8.1)	
Comportment Eating					
Cognitive Restriction	123 (58.5)	66 (31.4)	39 (18.6)	18 (8.5)	0.001
Uncontrolled	54 (25.7)	35 (16.7)	10 (4.8)	9 (4.2)	
Emotional	33 (15.7)	24 (11.4)	3 (1.4)	6 (2.8)	
Sedentariness					
Time Spent Watching TV	52 (24.7)	28 (13.3)	14 (6.6)	10 (4.7)	0.0001
Time Spent on the Computer	141 (67.1)	85 (40.4)	30 (14.2)	26 (12.3)	
Time Spent Reading	17 (8)	7 (3.3)	8 (3.8)	2 (0.9)	

TPA: Type of Physical Activity

Table 3

Frequencies of physical activity level and mean clinical parameters by nutritional status.

Variables	Normal-weight n = 33	Overweight n = 50	Obesity n = 101	p
LPA Low, n(%)	6 (2.8)	48(22.8)	97 (46.1)	0.0001
LPA Moderate, n(%)	11 (5.2)	1 (0.4)	3 (1.4)	0.041
LPA Intense, n(%)	16(7.6)	1 (0.4)	1 (0.4)	0.0356
Weight (Kg)	62 ± 8.8	75 ± 8.4	84 ± 12.0	0.036
Height (m)	1.62 ± 0.07	1.63 ± 0.07	1.64 ± 0.10	0.389
BMI (kg/m^2)	23.8 ± 2.9	28.8 ± 2.8	32.3 ± 3.5	0.0001
Total fat (%)	38.4 ± 10.4	39.6 ± 9.9	40 ± 12.2	0.0001
Visceral fat (%)	9.6 ± 8.3	10.8 ± 8.7	11.2 ± 9.7	0.0001
Lean mass (%)	31.9 ± 9.4	21.7 ± 9.4	20 ± 6.7	0.0001

LPA: Level of physical activity

Cardiovascular risk factors related to the metabolic syndrome were significantly higher among inactive employees (p = 0.0001). If the agent became more active, the cardiovascular risk factors related to the metabolic syndrome increased significantly with the level of PA (p <0.0001).

In univariate analysis, the time spent on the computer, the time spent watching television, the cognitive restriction, uncontrolled diet, the female sex, the age of over 40 years and the high socio-professional status are the determinants of physical inactivity and sedentary behavior. After adjustment, the probability of having a low level of physical

activity and sedentary behavior was 5 times higher among employees spending more than three hours of time sitting on the computer (OR aj = 5.188 95% CI (1.389-7.318)), p = 0.006), 3 times higher among those sitting in front of the television (OR aj = 3.042 95% CI (1.155-8.012), p = 0.024), 2 times higher among employees spending more than three hours of sitting time to read (OR aj = 3.456 95% CI (1.294-5.677), p = 0.006 and cognitive restriction (OR aj = 3.188 95% CI (1.389-7.318), p = 0.006) as well as 3-fold higher in those with a high socio-professional status (OR aj = 3.57 95% CI, 1.77-6.68), p <0.015).

Table 4

Cardiovascular risk factors related to metabolic syndrome by level of PA.

FRCV related to SM	Low (n=52)	Moderate (n=52)	Intense (n= 33)	p
Waist circumference (cm)	99 ± 13.0	79.8 ± 10.8	78.69 ± 10.6	0.0001
Blood glucose (mg/dl)	129 ± 24.8	129 ± 27.0	126 ± 29.0	0.031
CT (mg/dl)	228 ± 18.7	210 ± 17.3	208 ± 18.5	0.057
HDL-C (mg/dl)	38.6 ± 18.5	85 ± 24.0	86 ± 22.9	0.002
LDL-C (mg/dl)	170 ± 13.9	162 ± 14.8	160 ± 14 .6	0.381
Triglycerides (mg/dl)	169 ± 19.5	150 ± 19.5	148 ± 17.3	0.001
PAS (mmHg)	135.6 ± 17.0	127.2 ± 15.3	102.3 ± 20.3	0.045
PAD (mmHg)	92.1 ± 14.5	82.5 ± 11.8	73.1 ± 15.9	0.028

FRCV: Cardiovascular Risk Factors, SM: Metabolic Syndrome

Table 5

Determinants of physical inactivity (low physical activity level) and sedentary behavior.

Variables	Univariate analysis			Multivariate analysis		
	p	OR Gross	IC95%	p	OR aj	IC95%
Sedentary behavior		1			1	
Time Spent Watching TV	0.02	2.71	1.171	0.024	3.042	1.155
Time Spent on the Computer	0.003	5.064	1.477	0.006	5.188	1.389
Time Spent Reading	0.012	2.12	1.183	0.006	3.456	1.294
Total Sedentary Time	0.039	0.928	0.865	0.044	0.422	0.852
Food Behavior		1			1	
Uncontrolled	0.005	2.874	1.379	0.054	2.19	0.987
Emotional	0.039	0.928	0.865	0.044	0.422	0.852
Food Restriction	0.003	3.064	1.477	0.006	3.188	1.389
Sex		1			1	
Male	0.008	0.998	0.996	0.011	0.697	0.994
Female	0.000	4.756	2.029	0.603	1.334	0.451
Age		1			1	
< 40 years old	0.000	6.5	2.724	0.881	1.093	0.341
≥ 40 years	0.000	9.926	3.987	0.514	1.599	0.39
Socioprofessional status		1			1	
Commanders	0.034	5.05	1.13	0.015	3.57	1.77
Collaboration frameworks	0.041	2.288	1.035	0.163	1.89	0.773
Executing agents	0.017	0.962	0.931	0.433	0.986	0.951

Discussion

This study was conducted to determine the level of physical activity and eating behavior of employees of the Multimodal Freight Management Office in Kinshasa, capital of the Democratic Republic of Congo. The prevalence of low physical activity level (physical inactivity) among employees was 59.5%. It is higher than that (10 to 46%) of the study The International Prevalence Study on PA: results from 20 countries, carried out from 2002 to 2004 on a population aged 18 to 65 years and used, like us, the same questionnaire IPAQ (Bauman et al., 2009).The prevalence of eating disorders expressed by cognitive restriction was 58.5% followed by 25.7% for uncontrolled feeding. This result is close to those of Kusuayi et al. (2018). The level of low physical activity or physical inactivity was predominantly among commanders (33.8%) over 40 years (46.2%) males (36.2%), and decreased with age, sex and socio-pressure status. This result is consistent with those of Muller et al. (2003) as well as that of Kantomaa et al. (2007) who observed that, the more one occupies the functions of command and one As age increases, the level of physical activity decreases and sedentary behavior increases (Muller, 2003; Kantomaa et al., 2007).

In the study of Lafay et al. (2009), 48.4% of men and 41.3% of women were inactive. This physical inactivity was in the order of 63.9% for men and 29.5% for women in the ENNS national health nutrition study (2006-2007) (Lafay et al., 2009; Salanave et al., 2015; USEN, 2007).The majority of responses (47.6%) of employees to the question of type of low physical activity are those related first to work, then to displacement (29%). They are more oriented towards sedentary or motorized movement than active (22.3% against 6.6%). Our results are similar to those obtained by the survey, barometer health nutrition 2010 which is 57.7% (Baromètre Santé Nutrition, 2010).The first reason for the physical inactivity advanced by employees is related to lack of time. The higher the function, the more poor eating behavior (p = 0.001). In our study, cognitive restriction (31.4%) and uncontrolled eating (16.7%) were identified more frequently among commanders as they are those for whom leisure motivation is low (6.7%). These are more likely to give the reason of health as motivation. These results correspond to those of the Baromètre santé (2000) study. Our study also showed that 40.4% of command executives spend more than three hours of

time on the computer and 13.3% watch television. We also observed a positive association between sedentary behavior, eating behavior and high socio-professional status (p = 0.0001). The higher the grade, the more sedentary one becomes and the eating behavior is changed. This finding is consistent with those of Beryman et al. 2008, de Burton et al. 2000 as well as those of Barnett et al. 2008 who noted that high socio-occupational status is intimately associated with physical inactivity, eating behavior and sedentary lifestyle. Finally, our investigation showed that working time beyond three hours of time on the computer, watching television, having cognitive restriction and belonging to high socio-professional status, increased the risk of becoming inactive by 3 to 5 times / or sedentary. A positive relationship was observed between morphological, physiological, lipid profiles, body composition and sedentary behavior (p = 0.001) (Beunza et al., 2007; Ekelund et al., 2009). In contrast, these same profiles are associated with a decrease in muscle mass and high density lipoprotein (p = 0.002). This result is consistent with those of Beunza et al. 2007, from Ekelund et al. 2009, by Fung et al. 2000, Helmerhorst et al. 2009 who studied the relationship between time sitting on the computer, in front of television and the bio marker of cardiovascular risk factors. However, it is easy to emphasize as Gardiner et al. 2011, Gomez-Cabello et al. 2012, Gao et al. 2007, Gennuso et al. 2013, Stamatakis et al. 2012, that sedentary lifestyle is related to an increase in morphological profile, physiological and body composition.

Conclusion

Employees of the Multimodal Freight Management Office in Kinshasa have a low level of physical activity and a cognitive food restriction. The time they spend more than three hours on the computer increases the risk of becoming inactive and sedentary 5 times. On the other hand, this same time increases 3 times to watch television and to spend reading as well as to have the cognitive restriction. It is linked to high socio-professional status. In contrast, the parameters studied are associated with a decrease in muscle mass and high-density lipoprotein. Obesity and the metabolic syndrome are common pathologies in the workplace where physical inactivity and an unhealthy eating habit are key modifiable risk factors. Awareness-raising and the development of a structured exercise intervention program combined with low-calorie, low-salt, high

vitamin and fiber nutrition education is urgently needed to improve health in the workplace.

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Conflict of Interest

The authors declare that they have no conflict of interest. They are solely responsible for the writing and content of this article.

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