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ORIGINAL ARTICLE

CARDIOVASCULAR RISK FACTORS AND QUALITY OF LIFE OF TAXI DRIVERS FATORES DE RISCO CARDIOVASCULAR E QUALIDADE DE VIDA DE TAXISTAS FACTORES DE RIESGO CARDIOVASCULAR Y LA CALIDAD DE VIDA DE TAXISTAS

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ABSTRACT

Objective: analyzing the cardiovascular risk factors and the taxi drivers' quality of life. **Method:** a cross-sectional study in which data collection was carried out from January to March 2012. The study population consisted of 102 taxi drivers. For tabulation and analysis of the data there was used SPSS version 17.0 software. The research had the project approved by the Research Ethics Committee under protocol nº 135/2008. **Results:** the taxi drivers had an average age of 52,9 years old (SD±11,9). The study shows that the measurements of BMI and blood pressure showed the prevalence of overweight 48% and 44,1% hypertensive. Regarding quality of life, it was observed that only the general state of health domain did not reach an average above 70,0 points, being the lowest average domain. **Conclusion:** considering the risk factors to cardiovascular disease the study showed that can interfere on the quality of life. **Descriptors:** Cardiovascular Diseases; Taxi Drivers; Quality of Life.

RESUMO

Objetivo: analisar os fatores de risco cardiovascular e a qualidade de vida de taxistas. **Método:** estudo transversal no qual a coleta dos dados foi realizada de janeiro a março de 2012. A população do estudo foi constituída por 102 taxistas. Para tabulação e análise dos dados foi usado o programa SPSS versão 17.0. A pesquisa teve a aprovação do projeto pelo Comitê de Ética em Pesquisa sob o protocolo nº 135/2008. **Resultados:** os taxistas apresentaram média de idade de 52,9 anos (DP± 11,9). O estudo evidencia que as medidas do IMC e pressão arterial mostraram a prevalência de sobrepeso 48% e hipertensos 44,1%. Em relação à Qualidade de Vida, observou-se que apenas o domínio estado geral da saúde não alcançou a média acima de 70,0 pontos, sendo o domínio de menor média. **Conclusão:** considerando os fatores de risco às doenças cardiovasculares o estudo evidenciou que podem interferir na qualidade de vida. **Descritores:** Doenças Cardiovasculares; Motoristas de Táxi; Qualidade de Vida.

RESUMEN

Objetivo: analizar los factores de riesgo cardiovascular y la calidad de vida de los taxistas. **Método:** es un estudio transversal en el que la recogida de datos se llevó a cabo de enero a marzo de 2012. La población del estudio consistió en 102 taxistas. Para la tabulación y el análisis de los datos se utilizó el programa SPSS versión 17.0. La investigación tubo el proyecto aprobado por el Comité de Ética de Investigación bajo el protocolo nº 135/2008. **Resultados:** los taxistas tenían una edad media de 52,9 años (DE±11,9). El estudio muestra que las mediciones de IMC y la presión arterial mostraron la prevalencia de sobrepeso de 48% y hipertensos 44,1%. En cuanto a la calidad de vida, se observó que sólo el dominio estado general de salud no alcanzó un promedio de 70,0 puntos, el dominio promedio más bajo. **Conclusión:** teniendo en cuenta los factores de riesgo a las enfermedades cardiovasculares, el estudio mostró que pueden interferir con la calidad de vida. **Descriptores:** Enfermedades Cardiovasculares; Los Conductores de Taxis; Calidad de Vida.

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INTRODUCTION

The changes in the epidemiological patterns in Brazil and the consequent increase in incidence and prevalence of cases of chronic non-communicable diseases (NCDs) have led health authorities to pay special attention to their risk factors and disorders.¹ In this sense risk factors, such as obesity, smoking and sedentary lifestyle, both related to cardiovascular health are being discussed nowadays for the social importance resulting therefrom.²

Hypertension has high prevalence and low rates of control, and is one of the most important public health problems. Mortality from Cardiovascular Disease (CVD) increases progressively with increased BP from 115/75 mmHg linear, continuous and independent.¹

Risk factors related to hypertension were appointed and distributed in not susceptible to modification (age, sex, heredity, race) and the modifiable (hypertension, smoking, alcohol consumption, obesity, physical inactivity, diet).^{3,4}

In this context is the increasingly common interest in research related to QOL. The term "quality of life" may indicate different aspects of the individual's daily life or specific groups. Regarding QOL, the commonly used concept is the individual's perception of their physical, emotional and cognitive; social relationships; social roles adopted in life; and the various aspects related to the environment where one lives.⁵

By the factors mentioned above, called attention to the amount of individuals, male, living taxi drivers work and are daily exposed to stress, often more concerned with work than with their times of rest, for sometimes do not have the time to care for their own health.

Therefore, the relevance of this research is to take information that can contribute to a reflection on the improvement of QOL, weight monitoring, blood pressure levels and behavioral factors of taxi drivers and thus be able to offer to them options of better working conditions and social life.

In this context, the objective of the study was to analyzing the quality of life and cardiovascular risk factors of taxi drivers.

METHOD

It is an epidemiological study of transversal cohort. Data collection was conducted from January to March 2012 in 10 taxi stands located in Jequie-BA, specifically in the bus station, municipal market, Jequiezinho

neighborhood, squares Ruy Barbosa and Bandeira, respectively.

The study population consisted of 102 taxi drivers, chosen through non-probability convenience sampling from the BP measurement of the taxi drivers, who were available to help with the search. Inclusion criteria individuals should be registered in the trade association and sign the Informed Consent Form (ICF).

Taxi drivers, so parked their vehicles or were in the workplace, were randomly invited to participate. The contact was initiated by identifying the researcher then the explanation of the nature of the study. Subsequent to agree to participate was made the free and informed consent (IC). The interviews were conducted by a single researcher, in order to address questions or possible discomfort to participants.

The first questionnaire was developed by the authors containing the socio-demographic profile and behavioral factors. The second was the generic assessment questionnaire SF-36 quality of life - Medical Outcomes Study 36 - Item Short-Form Health Survey⁶. It is an instrument composed of 36 items that assess the components physical health and mental health, with the following areas: physical functioning, bodily pain, general health, vitality, emotional, social functioning and mental health. The results of each component ranged from 0 to 100, being 0 (zero) the worst health status and QOL or impaired hundred (100) the best state of health or quality of life.

There was also carried out the anthropometric measurements (weight and height) and blood pressure levels. To measure of blood pressure (BP) was used, sphygmomanometer (calibrated) and stethoscope both the PremiumTM brand. They followed up the measure recommended the sitting, with cuff size appropriate to the arm circumference and there were two consecutive measurements at five minute intervals. In the data analysis there was used the average of the last two measurements. There were classified as hypertensive those with systolic blood pressure > 140 mmHg and/or diastolic pressure > 90 mmHg.¹

The weight (in kilograms) was observed in portable scale (Tech Line) and the height (in centimeters) with a compact stadiometer (E210-Wiso). The calculation of body mass index (BMI) = weight/height² (kg/m²) was achieved through weight and height measurements and classified as: healthy (<25 kg/m²) overweight (25 to 29,9 kg/m²) and obese (>30 kg/m²).⁷

The waist circumference (WC) was measured by a tape measure through the midpoint between the costal margin and the iliac crest and was classified as: >94 cm as increased risk for cardiovascular events and >102 cm at much increased risk.⁶ The hip circumference (HC) was measured at the largest portion of the gluteus. The central body fat distribution was estimated by waist/hip ratio (WHR) and the measurement of waist circumference (cm). The identification of cardiovascular risk was performed using the ratio $WHR = WC \text{ (cm)} / QC \text{ (cm)}$.⁷

Questionnaire data were entered into a spreadsheet in Microsoft Excel software, and their examination was performed through the aid of the program Statistical Package of Social Sciences (SPSS) version 21.0. There was performed at first the analysis of descriptive statistics (frequency, average, standard deviation, confidence interval). The normality of variables was tested by Kolmogorov-Smirnov normality test. Subsequently were applied the non-parametric Mann-Whitney test for comparison of numerical variables. The correlation between anthropometric indicators and hypertension using the QOL variables and the correlation between the dimensions of the SF-36 were performed by Spearman correlation coefficient. The significance level was set at $p < 0,05$.

The dependent variable of this study were the domains of quality of life of the SF-36

(functional capacity, physical aspects, pain, general health, vitality, emotional aspects, social aspects and mental health) and the independent variables are the pressure levels and anthropometric data.

The study was submitted to the Research Ethics Committee of the State University of Southwest Bahia, and was approved under protocol nº 135/2008, respecting the rules of Resolution nº 196/1996.

RESULTS

It was revealed that all taxi drivers were male, were aged between 40-59 years old, with an average age of $\pm 11,9$ (Min = 21 and Max = 81), declared themselves not white, with complete elementary school, living with a partner; with average income of 2-3 minimum wages. Regarding life habits have a history of smoking and current alcohol consumption and the lack of physical activity. In addition, 73,5% (n = 75) claimed to have relatives with hypertension.

In the analysis of blood pressure levels highlights the prevalence of normotensive individuals 55,9% (n = 57), in relation to anthropometric indicators, 57,9% (n = 59) had the AC changed. In the investigation of BMI 68,6% (70) was presented overweight; Table 1.

Table 1. Characterization of the sample studied in numerical values and percentages. Jequie-BA, 2012.

Variable	Categories	n	%
Age	21-39	13	12,9
	40-59	57	55,8
	>60	32	31,3
Ethnicity	White	33	33,6
	Non-white	69	66,4
Schooling	Without formal education	01	0,9
	Incomplete elementary school	21	20,6
	Complete elementary school	37	36,3
	Incomplete high school	25	24,5
	Complete high school	13	12,8
Marital Status	Incomplete higher education	05	4,9
	With a partner	58	56,8
	Without a partner	44	43,2
Monthly Income	1 minimum wage	03	2,9
	Between 2 and 3 minimum wages	75	73,6
	Over 3 minimum wages	24	23,5
Religion	Yes	72	70,6
	No	30	29,4
Smoking	Current	04	3,9
	Pregress	37	36,3
	Never	61	59,8
Alcoholism	Current	47	46,1
	Pregress	38	37,2
	Never	17	16,7
BP	Normal	57	55,9
	Hypertensive	45	44,1
CA	Normal	43	42,1
	Increased risk	34	33,3

	High increased risk	25	24,6
BMI	Normal	32	31,4
	Overweight	40	38,0
	Obese	21	20,6

It was found that the results obtained in comparison between systolic blood pressure (SBP) and diastolic (DBP) and WHR variables, BMI and WC statistically significant between (PAS x WHR), (PAS x BMI), (PAD AC x) $p<0,05$; Table 2.

Table 2. Characterization of the systolic and diastolic blood pressure with anthropometric variables of the taxi drivers. Jequie-BA, 2012.

Variable	SBP			DBP		
	≥ 140	< 140	p	≥ 90	< 90	p
BMI	27,5 $\pm$ 3,3	26,1 $\pm$ 3,6	0,048*	26,3 $\pm$ 3,2	27,1 $\pm$ 3,8	NS
CA	97,6 $\pm$ 10,3	95,6 $\pm$ 10,3	NS	99,8 $\pm$ 10,4	93,4 $\pm$ 9,8	0,002**
RCQ	0,96 $\pm$ 0,08	0,91 $\pm$ 0,07	0,017*	0,92 $\pm$ 0,06	0,94 $\pm$ 0,08	NS

Mann-Whitney Test, $p<0,01^{**}$ $p<0,05^{*}$, NS - Non-significant, SBP - Systolic Blood Pressure, PAD - Diastolic Blood Pressure.

From the values obtained on the QOL in the analysis of the SF-36, it was observed that only the general state field of health did not average above 70,0 points, being the lowest average domain. The domain with the best average was social aspect, 97,1 points CI 95% (95,6 to 98,7); Table 3.

Table 3. Scoring values for each domain and components of the questionnaire SF-36. Jequie-BA, 2012.

Domains of SF 36	Average	SD	IC (95%)
Functional Capacity	80,2	$\pm 16,0$	(77,1-83,4)
Physical Aspect	90,9	$\pm 25,0$	(86,0-95,8)
Pain	72,1	$\pm 23,2$	(67,6-76,7)
General state of health	68,4	$\pm 18,3$	(64,8-72,0)
Vitality	76,2	$\pm 18,3$	(72,6-79,8)
Social Aspect	97,1	$\pm 7,5$	(95,6-98,7)
Emotional Aspect	94,4	$\pm 18,8$	(90,4-,98,3)
Mental Health	81,0	$\pm 15,7$	(78,1-83,9)

By analyzing the relationship between anthropometric variables, blood pressure and the dimensions of the SF-36, it was observed that the results were statistically significant at $p<0,05$ between SBP x Emotional Aspect and Functional Capacity; CA x Vitality; BMI x Vitality and WHR x Functional Capacity. It was found that, in general, the correlations were weak; Table 4.

Table 4. Correlation between blood pressure and anthropometric variables with the domains of the SF-36. Jequie-BA, 2012.

Variables	DBP	SBP	AC	BMI	RCQ
Vitality	0,435	0,333	0,012*	0,011*	0,111
General state of health	0,630	0,571	0,410	0,848	0,480
Physical Aspect	0,078	0,116	0,186	0,321	0,675
Emotional Aspect	0,334	0,029*	0,287	0,787	0,182
Mental Health	0,962	0,856	0,443	0,848	0,119
Pain	0,762	0,138	0,052	0,826	0,565
Functional Capacity	0,191	0,023*	0,155	0,129	0,045*
Social Aspect	0,366	0,177	0,912	0,389	0,893

Correlation of Spearman, $p<0,05^{*}$

DISCUSSION

The study sample consisted of males with complete primary education and age of 52,9 years old (SD $\pm$ 11,9). According to the literature, as age progresses the individual becomes more vulnerable to cardiovascular diseases.^{4,8} Additionally, hereditary factors showed the prevalence of 73,5% (n = 75) confirming other studies demonstrating the inheritance with the development of CVD.⁹

Regarding smoking it was observed among taxi drivers 40,2% (n = 41) have ever used or are currently using tobacco. The high frequency found in this study can be explained

by the fact that smoking is related to the effect of nicotine in the body that provides dependency, physical, emotional and behavioral changes.¹ Smoking increases the heart rate and blood pressure besides being as a CVD risk factor.¹⁰

As for drinking the study showed the prevalence of 83,3% (n = 85) of taxi drivers who use alcohol. Considering there is a relationship between alcohol consumption and blood pressure levels, it is observed that the decrease of alcohol contributes to lowering blood pressure and consequently the risk of developing worsening of CVD.¹¹

From the results obtained in this study, we observed the prevalence of risk factors for the development of chronic diseases. Among these, the highlight was the prevalence of overweight and obesity, reaching 68,6% (70) of the taxi drivers. What may be associated with abuse of caloric intake and sedentary lifestyle, in which the excess calories is stored as adipose tissue or fat accumulation.¹² Studies developed with the prevalence of obesity showed that dietary changes associated with activity practices physical regularly provide weight reduction.^{13,20}

Regarding regular physical activity it has been shown that 59,8% (n = 61) of individuals do not realize physical activity. Other studies demonstrate the importance of physical activity, indicating that an active life style, independent of the activity practiced, can be considered as a public health strategy to reduce CVD associated with sedentary habits.^{14,15}

The prevalence of hypertension in the urban adult population ranges from 22,3% to 43,9%, depending on the city where the study is conducted.¹⁶ In the study with the taxi drivers the prevalence was 44,1% (n = 45) higher or equal to 140 mmHg for systolic and 90 mmHg diastolic, which is higher than other national studies, such as loads of drivers¹⁷ 37% (n = 90) and bus drivers¹⁸ 22,4% (n = 48). These findings can be explained by the prevalence of hypertension related to risk factors such as heredity, sedentary, drinking and smoking.¹⁹

By analyzing the correlations between blood pressure and anthropometric indicators was no statistically significant difference ($p < 0,05$) between systolic blood pressure (SBP) and diastolic (DBP) with the variables: waist-hip ratio (WHR), Body Mass Index (BMI) and abdominal circumference (AC). This finding can be explained by WHR, BMI and WC are risk factors for hypertension and other cardiovascular diseases. The problems resulting from this association has become a growing public health problem in worldwide.^{20,21}

Regarding the results on the domains of QOL, the area with the highest average was the social aspect, 97,1 points, showing that the physical and emotional problems interfere little in the lives of individuals and the lowest average was the general state of health which he averaged 68,4 points. Another study²² showed that hypertensive individuals had high commitment to their quality of life. In this case, the most obvious domain was investigated was the "general health". One possible explanation for this result can be

attributed the fact that professionals working in transit are the ones who suffer the consequences generated by the environment in which they work what triggers physical impairment and mental problems among others.²³

Regarding the relationship between QOL and cardiovascular risk factors, statistically significant ($p < 0,05$) correlations to PAS x Emotional Appearance; PAS x Functional Capacity; CA x Vitality; BMI and WHR Vitality x Functional Capacity. With this result it became clear that blood pressure levels and anthropometric data influenced the QOL of taxi drivers. The differences found in the study may be explained by the difficulties in monitoring the lifestyle combined with physical inactivity and a sedentary lifestyle, as these factors can cause cardiovascular changes and consequently in QoL, which confirms the need to intervene in reducing this problem.²⁴

CONCLUSION

The study data show the prevalence of hypertension, which can be explained by the advanced age of most respondents, since people over 40 have a higher risk to develop further, the study also confirmed the prevalence of risk factors cardiovascular as overweight, sedentary lifestyle, smoking, alcohol consumption and hypertension family.

We observed the need in the development of hypertension control programs among taxi drivers, due to the high prevalence of the problem, will have her chance to develop strategies to reduce obesity and a sedentary lifestyle that profession. Alternatively, we might adopt the practice of physical activities with the proposal to be held in intervals that can be of their own work environment.

Considering the risk factors cardiovascular disease, the study found that can influence the QOL; this fact is justified due to sedentary lifestyle, in addition to hereditary factors in the study population.

Relevant issues to be mentioned are the limitations and implications observed in the study. About 20% of taxi drivers refused to participate in the study were not interviewed taxi drivers who worked only at night, a fact that made the sample was reduced, but that did not diminish the importance of epidemiological data found; also, from a study like this, one can observe the thought of taxi drivers about the cardiovascular risks and based on this assumption to establish the development of educational activities to promote health, through the possibility of

public policy proposals and discussion meet these workers.

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