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Original Article

Cardiovascular disease risk and body adiposity indicators and their relationship with psychosocial risk in workers of the commerce economic sector

Indicadores de risco de doenças cardiovasculares e de adiposidade corporal e sua relação com o risco psicossocial em trabalhadores do setor econômico do comércio

Riesgo de enfermedad cardiovascular e indicadores de adiposidad corporal y su relación con el riesgo psicosocial en trabajadores del sector económico de comercio

Mónica Andrea Rosero Rosero[a], Diana Milena Bedoya Salazar[a], Santiago Raigosa Soto[a]

[a]Unidad Central del Valle del Cauca – UCEVA, Tuluá, Colombia.

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Abstract

Introduction: Every year worldwide millions of deaths and non-fatal injuries occur due to inadequate occupational health practices, deaths from ischemic heart disease and stroke are caused by long working hours and high workloads. **Objective:** To identify the degree of correlation of psychosocial risk with the risk of cardiovascular disease and body adiposity indicators: BMI (body mass index), AC (abdominal circumference) and BFP (body fat percentage) in workers of the commerce economic sector. **Method:** A study with a quantitative approach and non-causal correlational scope, with a sample of 118 subjects (56.7% women and 43.3% men). Adiposity indicators were evaluated by means of the international protocol for anthropometric assessment ISAK, cardiovascular risk by means of the Framingham scale and to evaluate psychosocial risk, the Battery of Instruments for the Evaluation of Psychosocial Risk Factors validated for the Colombian population was applied. These data were processed and analyzed statistically using SPSS version 28. **Results:** A significant relationship ($p < .05$) between the variables is highlighted in different degrees, in the case of the correlation between cardiovascular disease and psychosocial risk its correlation coefficient is ($r =. 62$),

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for the correlation between BMI and psychosocial risk a coefficient of (r = .52), in the case of BFP and psychosocial risk in women it was (r = .45) and in men (r = .67) and for AC and psychosocial risk, its correlation coefficient was (r = .42) and (r = .64) respectively. **Conclusion:** There was a strong positive correlation between psychosocial risk and cardiovascular disease risk, as well as between BMI and psychosocial risk. In the case of BFP and psychosocial risk, the degree of correlation was moderate in women and strong in men, as was the correlation between AC and psychosocial risk.

Keywords: Cardiovascular Diseases, Risk Factors, Psychosocial Impact, Occupational Health.

Resumo

Introdução: Todos os anos, em todo o mundo, ocorrem milhões de mortes e lesões não fatais devido a práticas inadequadas de saúde ocupacional, as mortes por doença cardíaca isquêmica e acidente vascular cerebral são causadas por longas jornadas de trabalho e altas cargas de trabalho. **Objetivo:** Identificar o grau de correlação do risco psicossocial com o risco de doenças cardiovasculares e com os indicadores de adiposidade corporal: IMC (índice de massa corporal), PA (circunferência abdominal) e PBC (percentagem de gordura corporal) em trabalhadores do sector econômico do comércio. **Método:** Estudo quantitativo de âmbito correlacional não causal, com uma amostra de 118 indivíduos (56.7% mulheres e 43.3% homens). Os indicadores de adiposidade foram avaliados através do protocolo internacional de avaliação antropométrica ISAK, o risco cardiovascular foi avaliado através da escala de Framingham e o risco psicossocial foi avaliado através da Bateria de Instrumentos para a Avaliação de Factores de Risco Psicossocial validada para a população colombiana. Estes dados foram processados e analisados estatisticamente utilizando o SPSS versão 28. **Resultados:** Existe uma relação significativa ($p < .05$) entre as variáveis em diferentes graus, no caso da correlação entre doença cardiovascular e risco psicossocial o seu coeficiente de correlação é (r = .62), para a correlação entre IMC e risco psicossocial um coeficiente de (r = .52), para a PAF e risco psicossocial nas mulheres um coeficiente de (r = .52). 62), para a correlação entre o IMC e o risco psicossocial um coeficiente de (r = .52), no caso da PA e do risco psicossocial nas mulheres foi (r = .45) e nos homens (r = .67) e para a PA e o risco psicossocial, o seu coeficiente de correlação foi (r = .42) e (r = .64) respetivamente. **Conclusão:** Existe uma forte correlação positiva entre o risco psicossocial e o risco de doença cardiovascular, bem como entre o IMC e o risco psicossocial. No caso da PAF e do risco psicossocial, o grau de correlação foi moderado nas mulheres e forte nos homens, tal como a correlação entre a PA e o risco psicossocial.

Palavras-chave: Doenças Cardiovasculares, Fatores de Risco, Impacto Psicossocial, Saúde do Trabalhador.

Resumen

Introducción: Cada año a nivel mundial se presentan millones de muertes y lesiones no mortales por inadecuadas prácticas en salud laboral, muertes por cardiopatías isquémicas y accidente cerebrovascular son causadas por largas jornadas y altas cargas laborales. **Objetivo:** Identificar el grado de correlación del

riesgo psicosocial con el riesgo de enfermedad cardiovascular e indicadores de adiposidad corporal: IMC (índice de masa corporal), PA (perímetro abdominal) y BFP (porcentaje de grasa corporal) en trabajadores del sector económico de comercio. **Método:** Estudio de enfoque cuantitativo y alcance correlacional no causal, con una muestra de 118 sujetos (56.7% mujeres y 43.3% hombres). Se evaluó los indicadores de adiposidad mediante el protocolo internacional para la valoración antropométrica ISAK, el riesgo cardiovascular por medio de la escala de Framingham y para evaluar el riesgo psicosocial se aplicó la Batería de Instrumentos para la Evaluación de Factores de Riesgos Psicosociales validada para la población colombiana. Estos datos fueron procesados y analizados estadísticamente mediante SPSS versión 28. **Resultados:** Se destaca una relación significativa ($p < .05$) entre las variables en diferentes grados, en el caso de la correlación entre enfermedad cardiovascular y el riesgo psicosocial su coeficiente de correlación es de ($r = .62$), para la correlación entre el IMC y el riesgo psicosocial un coeficiente de ($r = .52$), en el caso del BFP y el riesgo psicosocial en mujeres fue de ($r = .45$) y en hombres de ($r = .67$) y para el PA y el riesgo psicosocial, su coeficiente de correlación fue de ($r = .42$) y ($r = .64$) respectivamente. **Conclusión:** Existe una correlación positiva y fuerte entre el riesgo psicosocial y el riesgo de enfermedad cardiovascular, del mismo modo, entre el IMC y el riesgo psicosocial. En el caso del BFP y el riesgo psicosocial, el grado de correlación fue moderado en mujeres y fuerte en hombres al igual que en la correlación entre el PA y el riesgo psicosocial.

Palabras clave: Enfermedades Cardiovasculares, Factores de Riesgo, Impacto Psicosocial, Salud Laboral.

Introduction

According to the report of the World Health Organization (WHO) and the International Labor Organization (ILO), 488 million workers worldwide were exposed to long working hours in 2016, likewise, 745,000 deaths were reported due to heart disease and stroke attributed to such exposure (Pega et al., 2021). Other data showed that in Latin American countries such as Chile, Brazil, Mexico, Uruguay, Argentina and Costa Rica, there were an average of occupational deaths between 3.1 and 9.7 per 100 thousand workers (Organización Internacional del Trabajo, 2023). In Colombia particularly, during the year 2022 there were 32,357 occupational illnesses and 537 deaths due to causes associated with work (Ministerio de Salud y Protección Social [MSPS], 2023).

In this sense, the competitiveness factors that organizations face today respond to the postmodern changes of the 21st century, at an economic, technological, political, social, cultural level, among others; This requires that organizations be in constant transformation and training of the human talent that makes them up to be competent in innovation and productivity (Colina & Albites, 2020). Now, the commercial sector must respond to the needs of today's world and represents an important percentage of job creation in different countries (Organización Internacional del Trabajo, 2008).

That is why the commerce sector is considered an important employer that takes on specific competitiveness challenges of innovation, quality, technology and productive flexibility (Ramírez Molina & Ampudia Sjogreen, 2018). This leads to workers

performing tasks of greater complexity and with a more specialized preparation to develop skills that allow them to adapt to new work demands (Maslach & Leiter, 2016; Rodríguez González et al., 2002). In turn, these work demands produce psychological and physical reactions in response to the exposure of psychosocial factors such as competition for positions, variety of roles, poor interpersonal relationships within organizations; among others (Franklin & Krieger, 2012; Guillén & Guil, 2000).

As a consequence, mental load can affect not only job performance, but also cause physiological reactions in the worker's health (Canizalez Arreola & Gómez Bull, 2018; Díaz Canepa, 2010; Skarpsno et al., 2020), which manifest themselves as response to the psychosocial risk to which workers are exposed. These psychosocial risks are known as all work situations that have a high incidence of seriously harming the workers health (Meier & Spector, 2013; Moreno Jiménez, 2011). For its part, the Organización Internacional del Trabajo (2016) defines psychosocial risk as all interactions between the work environment, the conditions of the organization, capabilities, needs and culture of the worker; as well as considerations external to work that may affect health, performance and personal satisfaction. From the above, it can be deduced that psychosocial risk is made up of both internal and external work factors, becoming a real challenge for occupational health.

With respect to cardiovascular disease (CVD), each year in the United States 444 billion dollars are invested in medical care and work disability due to CVD, with coronary heart disease being the main cause of the greatest number of deaths (Williamson, 2020). In addition, the association of cardiovascular risk with psychosocial risk has been documented (Greaney et al., 2020; Peterson, 2020; Xu et al., 2022); as well as work stress (Fransson et al., 2015; Kivimäki et al., 2012; Steptoe & Kivimáki, 2013).

Now, in a study carried out by Álvarez Silva & Espinoza Samaniego (2019) in a company in the commercial sector, it was highlighted that the working conditions associated with the organizational structure, work environment, workload, leadership focused only on the result, and few days of rest; they presented a higher index of work stress above 65% in the population under study. This allows us to analyze some aspects, for example, according to Kivimäki & Kawachi (2015), workers exposed to stressors present a risk level of 10 to 40% of suffering from coronary heart disease and stroke in relation to unexposed workers. In fact, other psychosocial risk factors such as demand-control (DC), effort-reward imbalance (ERI), workplace bullying, among others, are associated with harmful effects on cardiovascular health (Dragano et al., 2017; Sara et al., 2018; Trudel et al., 2016).

On the other hand, in a study carried out on 2,330 Mexican workers, the positive relationship between work stress and some cardiovascular risk factors (CVRF) was evidenced, such as total cholesterol, blood glucose, and obesity indicators: body mass index (BMI) and abdominal circumference (AC) (García-Rojas et al., 2015). These obesity indicators may be altered in people with psychosocial factors due to unhealthy nutritional behaviors, coinciding with Eisenberg et al. (2020) when finding a relationship between high consumption of sugary drinks and unhealthy foods in people with anxiety.

In this order of ideas, it can be seen how working conditions affect the worker's health, however, it is necessary to carry out more studies according to the sector and the

type of work activity, which allow more specific analysis; since adaptation to a work activity can also vary according to the personality, physical and mental state and the personal history of the worker (Guil Bozal & Guillén Gestoso, 2000). Now, the work sectors that have been studied the most in relation to psychosocial risks in Latin America are health care, manufacturing industries and educational institutions, which shows the need to expand research to other work contexts (Pujol-Cols & Lazarro-Salazar, 2021); and in this way, as recent studies suggest, create coping strategies or programs that can be adapted to the moment when the highest level of tension is generated according to the work activity (Calvo Rico et al., 2022; García-Heras Hernández et al., 2021).

In response to these needs and with the aim of contributing to the labor field, the objective of this research was to identify the degree of correlation of psychosocial risk with the risk of cardiovascular disease and indicators of adiposity: BMI (body mass index), AC (abdominal circumference) and BFP (body fat percentage) in workers in the economic commerce sector in the center of Valle del Cauca.

Materials and Methods

A total of 118 workers of both genders participated, of which 56.7% were women and 43.3% men, with an average age of 39.14 years (SD=10.4). Among the inclusion criteria that the participants of this study had to meet were being employees of companies in the commercial sector, being hired directly by the company to be evaluated and having worked in the organization for a minimum of one year; Workers who did not meet these criteria were excluded from the study. Once the personnel were selected, all the research procedures were explained so that they could provide signed and written informed consent, in accordance with the ethical guidelines established by the Helsinki Resolution (Asociación Médica Mundial, 2017) and the provisions of the Resolution. 8430 of October 4, 1993. These ethical guidelines are related to the participation of people capable of giving informed consent voluntarily, ensuring that they have received adequate information about the objectives, methods, benefits, foreseeable risks and discomforts within the evaluation, to be informed of their general results of the study, of the preservation of their identity and that the information provided would be treated only for preventive and investigative purposes. Likewise, the research was approved by the Ethics Committee of the Universidad Central del Valle (ID Code PI-1300-36.9-006-F, dated February 2022).

Instruments

To measure the degree of correlation of psychosocial risk with the risk of cardiovascular disease and obesity indicators, three instruments were used.

Psychosocial risk assessment

The battery of instruments for the evaluation of psychosocial risk factors validated for the colombian population by the Ministry of Social Protection (MPS, 2010) was applied, which evaluates three types of conditions: internal work, external work and

individual; applicable to different economic activities and trades that allows identifying the psychosocial factors to which workers are exposed.

Cardiovascular risk assessment

The evaluation of cardiovascular risk was carried out under the Framingham model adjusted and validated for the Colombian population (Muñoz et al., 2014), which predicts the risk of presenting a cardiac episode, such as acute myocardial infarction or death within ten years. For its application, information was collected on five variables required by the model, these are: gender, age, systolic blood pressure, smoking status, total cholesterol level and HDL cholesterol.

Evaluation of adiposity indicators

The adiposity indicators that were taken into account for this study were: BMI, AC and BFP, these anthropometric measurements were carried out under the standards and measurement techniques of the International Society for Advances in Kinanthropometry (Sociedad Internacional para el Avance de la Cineantropometría, 2019). For the interpretation of the results, the following classification was taken into account: In the BMI, the classification proposed by the American College of Sports Medicine (2022) was used, the AC with the guide of the European Society of Cardiology (Mach et al., 2020), and for the BFP the classification was implemented in the untrained population (Wilmore, 1982 as cited in Ladino Meléndez & Velásquez Gaviria, 2021).

Procedures

Prior to the application of the assessment tests, the characteristics of each of them were socialized to the participants belonging to the different companies in the study; after that, each person signed an informed consent in which they voluntarily agreed to participate in the research. Each test was applied in the same week on different days given the conditions of the organizations. The application of the battery of instruments for the evaluation of psychosocial risk factors was carried out by a psychologist specialized in safety and health at work, with software and supervised by the professional for proper use of it, each participant was asked to enter a soundproof systems room, without an electronic device to avoid distractions. The questionnaire lasted between 20 to 30 minutes, with questions about intra-work conditions, extra-work conditions, stress evaluation and general data sheet.

For blood samples of total cholesterol, HDL cholesterol and blood pressure indicators, the home service of health professionals from a clinical laboratory was available. Each participant was summoned to their workplace one hour before starting their work day in the morning, with a minimum fast of twelve hours according to laboratory instructions. At another time, the participants were summoned the next day at the same work address before starting their work day. Likewise, the workers were summoned with a minimum fasting period of 12 hours before the assessment of adiposity indicators. . Weight and height were recorded using a Health O'meter 402 kl scale with stadiometer. To measure body weight, the participant must stand in the

center of the scale, distributing the weight on both feet, without support, and with the minimum of clothing possible. To measure height, the subject must be in an upright position with their feet together, their back in contact with the stadiometer and their head in the Frankfort plane. To measure the skin folds, the participants had to be with little clothing, in an upright position, head and neck upright, looking straight ahead and arms extended downward on each side of the body. For this measurement, the Lange Skinfold caliper and the perimeter measurement were used. Abdominal examination was performed with the Faga brand anthropometric measuring tape.

Statistical analysis

Once the data was collected, they were systematized in the statistical package Statistical Package for the Social Sciences SPSS version 28. For all the results, the mean and standard deviation were calculated and a confidence level of $p < .05$ was considered to verify the statistical significance. Now, to determine the normality of the data, the Kolmogorov-Smirnov test was used; and to measure the relationship between the psychosocial risk variables with the risk of cardiovascular disease and indicators of body adiposity, the Sperman correlation test was applied for non-parametric samples. Regarding the classification of the correlation coefficient, the following magnitude scale was implemented: < .09, trivial; .10 – .29, small; .30- .49, moderate; .50-.69, strong; .70- .89, very strong and .90- 1.0, almost perfect (Hopkins et al., 2009).

Ethical aspects

All research procedures were aligned in accordance with the ethical guidelines established by the Helsinki Resolution (Asociación Médica Mundial, 2017) and the provisions of Resolution 8430 of October 4, 1993, presenting minimal risk. Likewise, the research was approved by the Ethics Committee of the Universidad Central del Valle (ID Code PI-1300-36.9-006-F, February 2022).

Results

In Table 1, it was observed that the average age of the 118 workers was 39.14 ± 10.4 years. In the BMI, a level of overweight was found to be 26.395 ± 3.81. On the other hand, the mean obtained for psychosocial risk presented a value of 29.816 ± 8.34, indicating a level of exposure to high psychosocial risk. On the other hand, the data obtained in the average cardiovascular risk presented a value of 5.00 ± 6.57, thus indicating that workers are at low risk of suffering from cardiovascular disease according to the parameters associated with Framingham.

Table 1. Means ($\bar{x}$) and deviation (SD) of body mass index (BMI), psychosocial risk, cardiovascular risk and age.

Variables	Age	BMI	Psychosocial Rik	Cardiovascular Risk
N	118	118	118	118
$\bar{x}$ (SD)	39.14 ± 10.4	26.395 ± 3.81	29.816 ± 8.34	5.00 ± 6.57

In Table 2, the percentage of body fat and abdominal circumference was observed according to the categorization of the variables by gender. Where it was found that, of the 118 participants, 67 were women with an average fat percentage of 26.025 ± 5.56, indicating a level of overweight. In the case of men, there were a total of 51 participants in this study and their average fat percentage showed a value of 18,859 ± 5,527, indicating a slight overweight, according to the classification in the untrained population respectively, in this way it can be seen that women had higher levels of the percentage compared to men. Regarding the average abdominal circumference, the results showed values of 89.33 ± 10.569 cm in women and 94.41 ± 10.585 cm in men, these values being high with reference to the European Society of Cardiology guideline (AC≥ 90cm in men ≥ 80 cm in women), in the case of women, elevated by 9 cm and in men by 4 cm, which indicates that women had a higher level of abdominal circumference in relation to men.

Table 2. Means ($\bar{x}$) and deviation (SD) of body fat percentage (BFP) and abdominal circumference (AC) by gender.

Gender		BFP	AC
Woman	N	67	67
	$\bar{x}$ (SD)	26.025 ± 5.563	89.33 ± 10.569
Man	N	51	51
	$\bar{x}$ (SD)	18.859 ± 5.527	94.41 ± 10.585

Regarding the correlation of the risk of cardiovascular disease and body mass index with psychosocial risk, Table 3 showed a level of significance (p<.05) with a coefficient of (r =.62) for the association of cardiovascular risk and psychosocial risk, and a (r =.52) between body mass index and psychosocial risk. This shows that there is a positive and strong correlation between the variables.

Table 3. Correlation of cardiovascular risk, body mass index with psychosocial risk, strength of association (r) and statistical significance (p).

Rho de Sperman	**N**	**Coef. (*r*)**	**Value p**
Cardiovascular risk - Psychosocial risk	118	.622	.000
BMI – Psychosocial Risk	118	.527	.000

Similarly, Table 4 shows that the correlation of the percentage of body fat and abdominal circumference with psychosocial risk in both genders is positive and statistically significant (p<.05). However, the correlation coefficient was different between men and women; since, the percentage of body fat, abdominal circumference and psychosocial risk in women was moderate (r =.45) and (r =.42), and in men the level of correlation was strong (r =.67) and (r =.649) respectively.

Table 4. Correlation of fat percentage, abdominal circumference with psychosocial risk by gender, strength of association (r) and statistical significance (p).

Rho de Sperman		***N***	**Coef. (r)**	**Value *p*.**
Fat percentage – Psychosocial risk	Woman	67	.458	.000
	Man	51	.675	.000
Abdominal circumference – Psychosocial risk	Woman	67	.425	.000
	Man	51	.649	.000

Discussion

The objective of this study was to identify the degree of correlation of psychosocial risk with the risk of cardiovascular disease and adiposity indicators: BMI, AC and BFP in workers in the commercial economic sector. The main results show that the average of the population under study is at a high level of psychosocial risk, which indicates that workers had a high incidence of suffering from health conditions due to exposure to psychosocial factors according to the authors Meier & Spector (2013) and Moreno Jiménez (2011). On the other hand, the average risk of cardiovascular disease was low; this could have been caused by the fact that the average age of the population was 39 years, which for Martínez Moya et al. (2021) is an important indicator to measure cardiovascular risk due to the changes that occur at the metabolic level as age advances. In this case, the average age does not represent a relevant score when applying the Framingham model to calculate the level of risk of cardiovascular disease (Muñoz et al., 2014).

On the contrary, the average observed in the adiposity indicators BMI, AC and BFP presented high levels. Firstly, the average BMI shows a level of overweight; Secondly, the average BFP in women is at a level of overweight, and in men slightly overweight. Finally, the mean AC indicates a high level in both men and women. It is worth mentioning that the high values associated with body fat according to Pino et al. (2009), are considered effective indicators to calculate cardiovascular risk; which indicates that the average of workers are exposed to cardiovascular risk factors.

Regarding the association of psychosocial risk with the risk of cardiovascular disease, it can be noted that the correlation was positive and strong (r = .62), which indicates that the greater the psychosocial risk, the greater the risk of cardiovascular disease. This result is similar to what was stated by Kivimäki & Kawachi (2015), when pointing out that a high sustained exposure to psychosocial factors is positively associated with a high risk of cardiovascular disease regardless of age and gender, in this case correlation coefficient was higher than that found in this study (r =1.34). In turn, Kivimäki et al. (2015) maintain that long working hours of more than 55 hours per week are highly associated with coronary heart disease (r =1.13) and to a greater extent with stroke (r =1.33). On the other hand, Rosario Hernández et al. (2014) found an inverse and positive correlation between psychosocial risk factors and cardiovascular health (r = -.24), which indicates that, by reducing psychosocial factors such as psychological harassment, communication blocks, work discredit, conflicts, interpersonal, among others, improve cardiovascular health. That is why suggestions such as those established by García-Rojas et al. (2015) of carrying out interventions adapted to the conditions and workplace to reduce psychosocial stressors, helps to improve the cardiovascular

health of workers, given that social support from colleagues and supervisors showed a statistically significant protective effect against levels elevated cholesterol, with values of up to 2.96 mg/dl lower in total cholesterol concentrations in the blood.

On the other hand, adiposity indicators showed a positive association with psychosocial risk, with a strong degree of correlation in the case of BMI (r = .52) for both men and women, which contrasts with the research carried out by García-Rojas et al. (2015) in a group of Mexican workers where it was evident that psychosocial work factors presented a positive association with this same adiposity indicator with a correlation coefficient lower than that found in this study (r = .24). Now, the association of psychosocial risk with AC and BFP was positive to different degrees, moderate in women (r =.42) and strong in men (r =.64), which indicates that the greater the psychosocial risk, the greater level of adiposity indicators are presented. These results coincide with the study carried out by Cotter & Kelly (2018), where a positive but in this case small correlation was found between psychosocial risk and the adiposity indicators of AC (r = .09) and BMI (r =. 14) regardless of gender and age.

In this way, it can be considered that a prolonged exposure to psychosocial risks associated with indicators of high adiposity in workers can trigger other cardiovascular risk factors, as shown in a prospective study carried out by Trudel et al. (2016), which showed that workers chronically exposed to psychosocial stressors presented a progressive increase in blood pressure values over five years, compared to those not exposed. Therefore, there is a probability that the population object of this study will manifest other cardiovascular risk factors in the coming years, in addition to those currently reported. Therefore, it is suggested to make action plans that mitigate psychosocial risk factors, as proposed by Xu et al. (2022), stating that workers with high psychosocial resources in different dimensions have a lower risk of cardiovascular disease.

According to the results presented in this study, the hypothesis initially proposed is confirmed, showing that psychosocial risk is associated with the risk of cardiovascular disease and indicators of body adiposity: BMI, AC and BFP in workers in the commercial economic sector. It is important to mention that although there is a high association between psychosocial risk and the risk of cardiovascular disease, it is necessary to analyze how these factors impact work performance, an aspect that was not addressed in this study but is recommended to be taken into account in future studies. research, as evidenced by Gajewski et al. (2023) in a recent study carried out on 494 workers from different work sectors, in which they point out that cardiovascular fitness predicts work capacity, especially overweight and obesity as a risk factor for low work capacity.

Likewise, it is recommended to carry out this type of analysis according to the specific characteristics of the labor sector and the type of work activity of the organizations' personnel, in order to create action plans or intervention strategies according to the specific needs of workers (Guil Bozal & Guillén Gestoso, 2000), and applied at the time when the highest level of stress is generated according to the work activity (Calvo Rico et al., 2022; García-Heras Hernández et al., 2021). Now, some intervention strategies that can be implemented for occupational psychosocial risk factors are those proposed by Medina Murillo et al. (2020), which are based on health

promotion through educational, recreational, sports, cultural activities, reinforcing healthy lifestyles, emotional care, among others.

Conclusion

Psychosocial risk presents a positive and strong relationship with the risk of cardiovascular disease, in the same way, adiposity indicators showed a positive association with psychosocial risk, with a strong degree of correlation in the case of BMI in both genders. For AC and BFP it was moderate in women and strong in men. Indeed, psychosocial risks negatively affect the cardiovascular health of workers.

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Corresponding author
Mónica Andrea Rosero
e-mail: mrosero@uceva.edu.co

Section editor
Prof. Dr. Rodolfo Morrison Jarra