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RISK FACTORS FOR CARDIOVASCULAR DISEASE (CVD) WITH ARRHYTHMIA IN ADULTS AGED 35 TO 70 YEARS

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ABSTRACT
Cardiovascular diseases (CVD) currently cause approximately two-thirds of deaths in the world. This background drives the present investigation with the objective of identifying practices that lead to these health alterations in middle-aged adults at the University of Guayaquil. The research methodology of this study is quantitative descriptive with a positivist approach in a sample of 51 members of human talent at the University of Guayaquil who attend the occupational health center; Through convenience sampling, the questionnaire developed and validated in the study by Torres, C 2019, called "Cardiovascular risk factors in drivers of the public transport company "José Gálvez s.a." in v.m.t." It is processed in the Excel statistical software program and the results of the sociodemographic factors are obtained, the age with the most probable risk for CVD is 41 to 51 years (41%) followed by 52 to 62 years (27%) and lastly the (12%) 62 years or older, with a greater possibility in the male gender, in those with married marital status (63%) and with higher education (51%). Those who have HTN in the male gender (73%); However, only 2% of males have an altered heart rate. The BMI with the male gender is the most compromised, with an upward trend with obesity (12) and overweight (11). 33% of the male gender has an unhealthy diet, prevailing over the female gender, of which 16% have an unhealthy diet and 27% of them have a healthy diet; As for men, 24% of them have a healthy diet. In conclusion, some risk factors for CVD can be overcome and with timely intervention a better level of health and average life span would be obtained in the population.

Keywords: risks-cardiovascular disease with arrhythmia-adults

DEVELOPMENT

Cardiovascular diseases (CVD) are the cause of approximately two-thirds of deaths in the world(1), 80% of which are in low- and middle-income countries; with the prognosis that, for by 2030, when the world population reaches 8200 million, 32.5% of deaths will be caused by cardiovascular diseases; of these, 14.9% will occur in men and 13.1% in women. In the region of the Americas, of 6.8 million deaths, 1.5 million correspond to the group of heart and blood vessel diseases(2)

Of the 80% of deaths related to cardiovascular diseases, coronary heart disease is recognized, and a third of these deaths occur prematurely in individuals under 70 years of age. The Pan American Health Organization (PAHO) in 2017, reports that of the population of Latin America and the Caribbean, approximately 20% and 35% of adults have developed CVD, being notorious that arterial hypertension is one of the first manifestations that precede this group of diseases(3)

Current studies have shown that these dysfunctions are closely related to unhealthy habits in the population; Lack of physical activity, consumption of substances harmful to health, alcohol, tobacco, drugs, unhealthy diets, little or no consumption of fruits and vegetables in the diet and high in saturated fats cause serious cardiovascular health conditions(2). This adds up to coherently declared health policies; more, inert in practice accompanied by the absence of environments with spaces to encourage the adoption and maintenance of healthy behaviors(4)

Cardiovascular diseases are within the category of non-communicable diseases and cerebrovascular accident, rheumatic heart disease and different coronary heart diseases stand out. In Western societies, cardiovascular diseases are predominant and include heart failure, ischemic heart disease, hypertensive disease, aneurysms, arterial thrombosis; along with hyperlipidemia, hyperglycemia, cardiac arrhythmias. With respect to heart failure (CHF), it has been found that it is more likely in patients with a history of myocardial infarction, high blood pressure, coronary heart disease (CHD), diabetes mellitus (DM), excessive alcohol consumption, chronic kidney disease (CKD) or cardiotoxic chemotherapy, with a family history of cardiomyopathy or sudden death(5)

In Ecuador, cardiovascular diseases are the leading cause of death, accounting for 26.49% of all deaths; of these, heart attack, cerebrovascular and renal strokes, hypertension in various forms, heart failure and vascular accidents are the most frequent. Specialists warn that there may be underreporting, which hides other pathologies with a high incidence in the world. In Guayaquil, 2.3% of people have heart failure (HF) and 5.1% have coronary heart disease (CHD). Other less frequent comorbidities include atrial fibrillation (1.7%), stroke and transient ischemic stroke (0.9%), in line with the occurrence of cardiovascular risk factors that are more pronounced with age(6)

Regarding cardiac arrhythmias, it is known that some are triggered by genetic factors, by inheritance from relatives and by underlying diseases, high blood pressure, coronary heart disease, heart valve diseases, stimulant substances, excessive consumption of caffeine, alcohol or illicit drugs, biochemical imbalances are sometimes causes and other consequences of alteration of the electrical function of the heart(7)

Likewise, emotional stress, chronic stress or episodes of this give particularity to occur in any person that manifests itself with expressions of alteration of the rhythm of the heartbeat, palpitations, dizziness, fainting chest pain, dyspnea, syncope which is rare but serious, related to breast disease, hemodynamic obstruction (aortic stenosis, obstructive hypertrophic cardiomyopathy), stroke or preexcitation(8)

Bradycardia and tachycardia are some arrhythmias that can be atrial, ventricular or supraventricular blocks, which involve atrioventricular blocks (AV blocks), in which there is a delay (first and second degree) or cessation (third degree) of the electrical conduction from the atrium to the ventricle. Tachyarrhythmias induced by obstructive sleep apnea or hypopnea produce multisystemic effects that directly influence cardiovascular function(9). Many of these arrhythmias are frequent but sporadic, paroxysmal, persistent and permanent, atrial fibrillation (AF) is the most common arrhythmia, affecting more than 4% of people over 40 years of age in Spain; of which there are retrospective studies that investigate clinical manifestations that precede, type and length of the atrial cycle in which it occurs (1)

CAs can occur in structurally healthy hearts due to genetic conditions that lead to 20 and 60% of idiopathic ventricular fibrillations, 4-12% of all sudden deaths, and about 20% of deaths of subjects with structurally healthy hearts; however, it triggers as a result of the drugs used during surgeries, bloody procedures, electrolyte alteration, thermal rise, alteration of the autonomic nervous system(8)

In this context, the need arises to assess the factors that influence the occurrence of cardiovascular disease in the university community that attends the UG Occupational Health Center. What are the sociodemographic data? What type of blood pressure and heart rate do they have? What anthropometric indicators does it have? What is their diet like? Do they usually practice harmful habits? What is their physical activity like?

METHODOLOGY

This research is quantitative, it is carried out in a sample of 51 workers from the University of Guayaquil who attend the Occupational Health Center. The survey is applied through a questionnaire that assesses indicators of physical activity, eating habits that includes a Likert scale with answer options of always, almost always and never, with the instrument that was developed and validated in the study by Torres, C 2019, called "Cardiovascular risk factors in drivers of the public transport company "José Gálvez s.a." in v.m.t." which includes modifiable behaviors and metabolic factors established by PAHO for the detection of cardiovascular risk factors; likewise, a physical evaluation sheet of cardiovascular risk indicators promoted by PAHO was used through a descriptive approach and non-probabilistic, intentional sampling; the inclusion criteria are: being part of the human talent in permanent or contracted UG, being over 35 years of age and under 70 years of age, attending the occupational health center. The collection of the data began with the delivery of the informed consent, once signed and with a fingerprint, the questionnaire was applied individually in order to support them in reading and/or doubts; then vital functions and anthropometric measurements were taken. The time spent by each participant averages 15 to 20 minutes. Dimensions, indicators, and scales are entered into the Mycrosoft Excel Statistics program, in which graphs are obtained that allow data to be obtained in response to the objectives of the study.

Results and discussion

Table No. 1 Sociodemographic data

GENERAL DATA	CATEGORY	N=51	100%
Age	30 to 40 years old	10	20%
	41 to 51 years old	21	41%
	52 to 62 years old	14	27%
	63 to 70 years old	6	12%
Sex	Female	23	45%
	Male	28	55%
Origin	Coast	50	98%
	Saw	1	2%
	Amazon	0	0%
Marital status	Bachelor	8	16%
	Cohabitant	4	8%
	Married	32	63%
	Divorced	2	4%
	Widower	5	10%
Level of education	Primary	6	12%
	High school	19	37%
	Superior	26	51%

Source: Survey of human talent in UG. who attend the occupational health department.

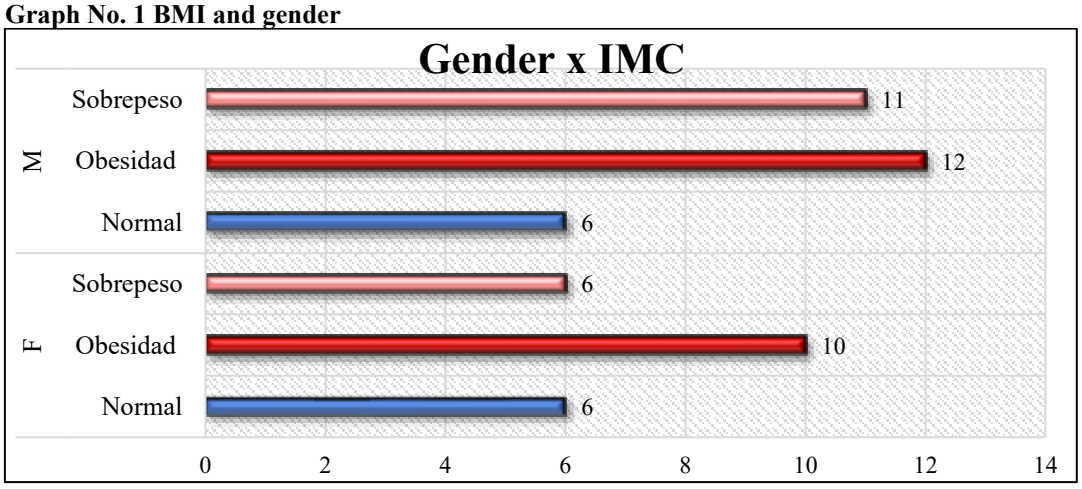
Analysis: This table identifies the age range with risk of cardiovascular disease, which ranges from 41 to 51 years old with a total of 41% of respondents, followed by 52 to 62 years old with a percentage of 27% and in last place 12% of 62 years or older; with a greater possibility in the male gender (55%). (98%) were married (63%) and (51%) had higher education. These findings coincide with Ramírez's study, which shows that the largest number of subjects who have risk factors for developing cardiovascular disease is in the age range of 40 years, with the variant that prevails in the female gender(10)These findings in the sociodemographic variable coincide with those of Torres' study, in which 43% (30) of the total population are between 40 and 49 years old, mostly 43% (30) come from the coast and 43% (30) from the mountains, their marital status corresponds to cohabitants 53% (37) and their level of education is secondary 96%. (11). While in the study of Jiménez, the vast majority in an age range of 36 to 40 years old and single marital status(2)

Table No. 2 Blood pressure with HR and gender

GENDER	CLASSIFICATION FC	N 51	100 %	BLOOD PRESSURE RATING	N 51	100%
Female	And	0	0%	And	3	27%
	N	22	43%	N	19	38%
Male	And	1	2%	And	8	73%
	N	28	55%	N	21	40%
C				CATEGORY	n=51	100%

Source: Survey of human talent in UG. who attend the occupational health department.
Analysis: This table shows the occurrence of high BP more frequently in males (73%), compared to females (27%). However, these results differ from those of the study by Peñaherrera, L. (2020) whose data show a higher prevalence of high blood pressure in women(12)
Within this table, it is recorded that both female and male genders do not register at the time of the assessment mostly alteration of the heart rate, with only 2% of the sample being altered. We have identified that in the female gender there is no data on altered heart rate and therefore we have 22 respondents with a normal heart rate, but as for the male gender 28 of the respondents have a normal heart rate and 1 has an elevated heart rate. We associate these data with the study by Veloza et al., (2019) tells us that frequency variability is a factor that can affect cardiac arrhythmia and can be used as a tool to give a diagnosis of the possible appearance of cardiovascular diseases, however, it also requires more reproducibility in the clinical area (13)

Graph No. 1 BMI and gender



Source: Survey of human talent in UG. who attend the occupational health department. In original language English
Analysis: In this bar graph it is detailed that in the particular gender deviation, with an upward trend in obesity and overweight in the male gender, prevails over the female gender. While in the study of Jiménez, the vast majority in an age range of 36 to 40 years and single marital status, have obesity and physical inactivity as risk factors, a statistically significant association was found between the variables body mass index (p= < 0.000) and obesity (2)

Table No. 3 Type of Food and Gender.

GENDER	FEEDING	N=51	100%
F	Unhealthy	8	16%
F	Healthy	14	27%
M	Unhealthy	17	33%
M	Healthy	12	24%

Source: Survey of human talent in UG. who attend the occupational health department.
Analysis:This table shows that of the total number of respondents, 16% of the female gender has an unhealthy diet and 27% of them have a healthy diet; As for the male gender, 33% have an unhealthy diet

and 24% of them have a healthy diet. These results coincide with the study of Troncoso, C. which includes diet quality as risk factors(14)

Table No. 4 Physical Activity and Gender.

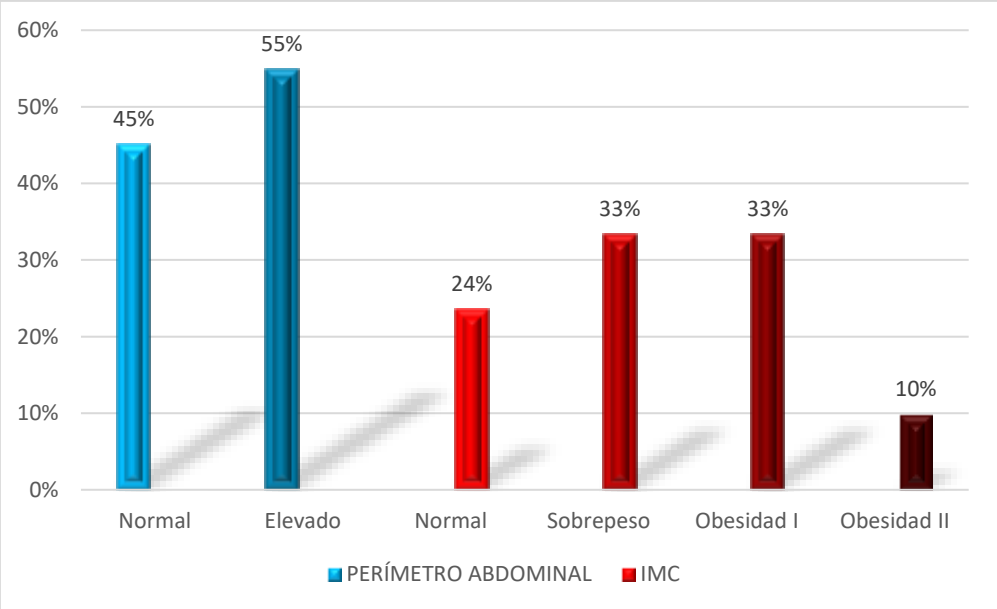
PHYSICAL ACTIVITY	HARMFUL HABITS				GENDER N=51		100%
	F	%	M	%	F	M	%
Unhealthy	1	2%	5%	10%	9	14	45%
Healthy	21	41%	24	47%	13	15	55%

Source: Survey of human talent in UG. who attend the occupational health department

Analysis: Within this table, it is shown that unhealthy physical activity prevails in the male sex with 14 people. Comparing with the article by Citta, 2020 where it says that physical activity reduces the risk of mortality due to cardiac arrhythmias, only a total of 27 participants have healthy physical activity Citta, 2020 says that physically active individuals have a lower risk of atrial fibrillation and arrhythmias than those surveyed with unhealthy physical activity where women exercise more vigorously, contrary to the present study in where those with the highest percentage of healthy physical activity are men (15) With respect to physical activity manifested in work and recreational activities that are carried out in daily life. The data show that approximately half of the sample is unhealthy, with percentages of 55% and 45% in men and women, respectively, thus inferring that the lack of physical activity has a direct impact on BMI and therefore is a risk factor for cardiovascular disease

Within these data it can be seen that women have only one person with harmful habits and 21 have healthy habits and as for men only 5 of these have harmful habits and 24 have healthy habits with respect to the non-consumption of tobacco, alcohol and drugs. In the variable consumption of tobacco or its derivatives, there was a higher frequency of non-consumption (96.5%). In the study carried out by Paredes, R. conclude that harmful habits such as smoking and alcohol are factors that negatively influence the health status of the population evaluated, with smoking being the factor that most intervenes in the prevalence of non-communicable diseases(16)

Graph No.2 Abdominal Circumference and Body Mass Index



Source: Survey of human talent in UG. who attend the occupational health department. In original language English

Analysis: In the data found, we have that 45% of the respondents have a normal abdominal circumference and complementing 55% of them have it elevated; in terms of BMI, we started with 24% in the normal range, which is equivalent to 12 respondents, 33% in the overweight range, which is equivalent to 17 people, 33% in type 1 obesity, which is equivalent to 17 individuals, and at the end 10% with type 2 obesity, which is equivalent to 5 people. These results coincide with those of Rojas, who managed to determine that the obesity and sedentary lifestyle were the most significant modifiable risk factors(17)

CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis of the data obtained after the application of the questionnaire, we assess the factors that influence the occurrence of cardiovascular disease in the university community that attends the UG Occupational Health Center. It is identified that those most exposed to the possibility of the occurrence of this phenomenon are conditioned by demographic backgrounds such as age ranging from 40 to 60 years, the male gender, married, and higher education.

The occurrence of cardiovascular disease is more likely before the age of 70 and more frequently throughout the world despite the existence of public policies for prevention and control; however, evaluating interdisciplinary and multisectoral plans and strategies that aim to improve the level of health of the population is a form of lifestyle treatment. In this sense, when dealing with the forms of life; In this study, the results show that the type of diet is unhealthy between both genders where there are 8 female participants with an unhealthy eating style while there are 17 male participants, where it is reflected that less than half maintain an unhealthy diet; on the other hand, in the pattern of physical activity it is reflected that less than half of the respondents maintain an unfavorable physical activity. Where it is identified that if this pattern is improved, the presence of cardiovascular disease can be avoided. It is possible to identify that, among the professorial, administrative and service staff of the University of Guayaquil, there are fewer who maintain harmful habits and less than a quarter between both sexes, meaning that there is a lower percentage of contracting cardiovascular disease with this risk factor.

Cardiovascular diseases that develop due to modifiable and non-modifiable factors, including cardiac arrhythmias, are multivariate; The occurrence in structurally healthy or structurally diseased heart requires a holistic assessment that includes the control of the cardiac impulse of atrioventricular nodes that may be altered as a result of one of the indicators such as blood pressure, which in this group is elevated (hypertension) in the male gender with a total of eight while in the female gender there is only 3 evidence of hypertension in the participants among teachers, administrative staff and UG service personnel; while the heart rate indicator we find a single male person with an elevation of the heart rate.

In relation to the BMI indicator, the findings show that ten female people are obese while six are overweight, on the other hand we have in the opposite gender that 12 are obese and 11 are overweight. This arises from the fact that in the male gender there is a higher incidence in what are indicators of risk factors to generate cardiovascular disease, in the age group of 35 to 65 years.

In this scenario, the determination of these conditioning factors allows the design of an intervention plan that exerts a positive influence on the ability to promote healthy lifestyles throughout their lives, in such a way as to prevent diseases or progression. However, each case must be evaluated by the specialist to determine the best treatment approach, regular clinical, biochemical, metabolic check-ups in which each person maintains an active participation in their care. Manage and control modifiable risk factors, such as high blood pressure, healthy lifestyles that include a balanced diet, low in saturated fat and sodium. fruits, vegetables, whole grains, and fish in the diet to promote heart health. Incorporate regular physical activity and maintain a healthy BMI. Prioritize mental health and seek support if significant levels of stress or anxiety are experienced. Incorporating stress management techniques to reduce the emotional load on the heart are ways to contribute to cardiovascular health.

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