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Artículo Original

Cardiovascular risk factors in residents of the Espinillo Community, Coronel Oviedo – Paraguay, 2022

Factores de riesgo cardiovascular en pobladores de la Comunidad Espinillo, Coronel Oviedo-Paraguay, 2022

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Abstract

Within the context of the academic triangulation of theory, research and university extension linked to the community, the project called "Well-being and healthy life in Espinillo by the FENOB" was born. Framed within this project, the need arises to have a baseline, so this study aimed to describe the cardiovascular risk factors present in the population of young people and adults in the community of Espinillo, year 2022. The study was quantitative approach, observational, descriptive design. The universe made up of about 1969 residents (youth, adults, seniors). The sample 141 people. The sample was non-probabilistic for convenience. The data collection was carried out by students and technical teachers of the 5th and 7th semester of the nursing career of the FENOB. A survey was applied, using as an instrument a questionnaire prepared for this purpose. The data found allow us to conclude that the population studied presents characteristics of cardiovascular risk. Despite being a young population, there is a high percentage of overweight/obesity and lifestyles that must be improved, especially with regard to eating habits and the practice of physical activity.

Keywords: risk factor, cardiovascular disease, population.

Resumen

Dentro del contexto de la triangulación académica de la teoría, la investigación y la extensión universitaria vinculada a la comunidad nace el proyecto denominado "Bienestar y vida sana en Espinillo de la mano de la FENOB". Enmarcado dentro de este proyecto, surge la necesidad de contar con una línea de base por lo que este estudio tuvo como objetivo

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describir los factores de riesgo cardiovasculares presentes en la población de jóvenes y adultos de la comunidad de Espinillo, año 2022. El estudio fue de enfoque cuantitativo, diseño observacional, descriptivo. El universo conformado por unos 1969 pobladores (jóvenes, adultos, adultos mayores) y la muestra 141 personas. El muestreo fue no probabilístico por conveniencia, la recolección de datos estuvo a cargo de estudiantes y docentes técnicos del 5° y 7° semestre de la carrera de enfermería de la FENOB. Se aplicó una encuesta, utilizando como instrumento un cuestionario elaborado para el efecto. Los datos encontrados permiten concluir que la población estudiada presenta características de riesgo cardiovascular. A pesar de ser una población joven, existe un alto porcentaje de sobrepeso/obesidad y estilos de vida que deben ser mejorados, especialmente en lo que respecta a los hábitos de alimentación y la práctica de actividad física.

Palabras clave: factor de riesgo, enfermedad cardiovascular, población.

Introduction

Non-communicable diseases (NCDs) claim the lives of 41 million people every year, which is equivalent to 74% of all deaths worldwide. Each year, 17 million people die from NCDs before the age of 70 (ODS, 2022). More people die each year from cardiovascular disease (CVD) than from any other cause and more than three quarters of these deaths, related to heart disease and stroke, occur in middle- and low-income countries such as ours (PAHO/ODS, 2022).

The risk of cardiovascular disease (CVD) is increased by an unhealthy diet, which is characterized by low consumption of fruits and vegetables and high consumption of salt, sugars and fats. Unhealthy eating contributes to obesity and overweight, which in turn are risk factors for CVD.People who do not get enough physical activity are 20% to 30% more likely to die prematurely than those who get enough physical activity. Therefore, physical inactivity is a key risk factor for the development of CVD, cancer and diabetes. It is also estimated that exposure to tobacco products is responsible for 10% of all CVD deaths (PAHO/ODS, 2022).

The various cardiovascular risk factors have particular characteristics. Some are called non-modifiable factors, such as sex, race, family history of cardiovascular disease, and advanced age. There is another group of risk factors called modifiable: overweight, obesity, sedentary lifestyle, dyslipidemia, and smoking. This last group is directly related to people's lifestyles. Arterial hypertension and diabetes mellitus should be highlighted because they are of high prevalence and incidence (González Galeano et al., 2014).

The community of Espinillo is territorially located within the district of Coronel Oviedo, department of Caaguazú. The Espinillo Health Post is located in the community and depends on the Coronel Oviedo Regional Hospital, at a distance of 9 km from it, operating from Monday to Friday from 7 am to 1 pm, with two licensed nurses, performing primary care functions, offering all MSP and BS programs.

University education today is based on the need to link students to community problems, to interact with the environment and to achieve community collaboration. In this context, the FENOB Coronel Oviedo branch wishes to contribute its grain of sand with the Espinillo community, taking into account that it is part of the institution's area of influence and is one of the fields of practice for nursing students.

Therefore, within the project of academic triangulation of theory, research and university extension linked to the community called "Well-being and healthy life in Espinillo by the hand of FENOB", this study had as its main objective to describe the cardiovascular risk factors present in the population of young people and adults in the community of Espinillo - Coronel Oviedo, year 2022; and thus have a baseline that allows the development of outreach activities in the community (health promotion activities in the community, meetings that promote healthy lifestyles in terms of physical activity, proper

nutrition, adherence to treatment, etc.).

It should be noted that this project responds to the first line of research of the FENOB Nursing Career "Community Health and Healthy Environments", since it addresses the social and environmental conditions that have a great impact on the health of a community. It is also important to mention Goal 3 of the SDGs which mentions "Ensure healthy lives and promote well-being at all ages". This goal is essential for sustainable development. Ensuring healthy lives and promoting well-being for all at all ages is important for building prosperous societies (United Nations, 2022).

Methodology

The study responds to a quantitative approach, observational design, descriptive type. It was carried out in the community of Espinillo, district of Coronel Oviedo, department of Caaguazú, considered a rural area. This community is crossed from east to west by international route PY02. The Espinillo Health Post is located 9 km away from the Coronel Oviedo Regional Hospital, operating from Monday to Friday from 7:00 am to 1:00 pm, with two licensed nurses, providing primary care, offering all MSP and BS programs. According to the population list assigned to the social territory, there are 883 homes, distributed among the five settlements and four communities. There are three elementary schools and one high school. The community also has the Law School of the Universidad Nacional Asunción Filial Coronel Oviedo, as well as other important entities such as the Vision Clinic and the office of the Ministry of Social Development. The population projection for the year 2022 according to INE is 3337 people.

The study universe was made up of about 1969 inhabitants (young people, adults, older adults). The sample consisted of 141 people. The sampling was non-probabilistic by convenience. The sample included inhabitants of the community, 20 years of age or older, of both sexes, who were present during the house-to-house visits.

Data collection was carried out between the months of October and November through home visits, conducted randomly. This activity was carried out by 21 students in the 5th semester and 26 students in the 7th semester, accompanied by three technical teachers from the nursing career.

A survey was carried out using a questionnaire designed for this purpose, which included sociodemographic data, tobacco consumption, alcohol consumption, dietary habits, physical activity, personal history of HT and diabetes, family pathological history, anthropometric measurements (weight, height, waist circumference) and blood pressure values. The OMS STEPS instrument for the surveillance of chronic disease risk factors (OMS, 2006), in its Paraguayan version, was used as a guide for the development of the instrument. For the control of anthropometric measurements and blood pressure, a scale, tape measure and adult aneroid sphygmomanometer were used. Nutritional status was assessed using the body mass index (BMI) and blood pressure and cardiovascular risk were assessed according to OMS classifications (Table 1, Table 2, Table 3).

Table 1. Classification – Body Mass Index (BMI)

BMI	CLASSIFICATION
Less than 18,5	Under Weight
Between 18,5 and 24,9	Normal Weight or adecuate
Between 25,0 and 29,9	Overweight
Between 30,0 and 34,9	Phase i Obesity
Between 35,0 and 39,9	Phase II Obesity
≥ to 40,0	Phase III Obesity – Morbid Obesity

Source: OMS classification.

Table 2. Classification of the blood presure

CLASSIFICATION	SYSTOLIC PRESSURE	DYSASTOLIC PRESSURE
Optima	<120	<80
Normal	120-129	84-84
High Normal	130-139	85-89
Phase I Hypertension	140-159	90-99
Phase II Hypertension	160-179	100-109
Phase III Hypertension	≥180	≥110

Source: OMS classification.

Table 3. Risk by waist circumference

MEN	
<94 cm	Normal
94-102 cm	High risk
>102 cm	Very high risk
WOMEN	
<80 cm	Normal
80-88 cm	High risk
>88 cm	Very high risk

Source: OMS classification.

The results were tabulated in an Excel spreadsheet. Descriptive statistics were used for the analysis. The results are presented in frequency tables and graphs. As for ethical aspects, the right to self-determination of the participants was respected at all times and anonymity was guaranteed.

Results

Regarding the sociodemographic data of the surveyed population, the most common age group is between 20 and 29 years old, 33%; 30 to 39 years old, 26%; 40 to 49 years old, 17%, with an average age of 39.5 years; 73% are female; 38% live with a partner, 34% are married; 48% have a basic school education, 35% a high school education; 67% are housewives; 79% have a family income below the minimum wage (Table 4).

Regarding tobacco use, 91% reported not using tobacco, 9% did. Of the persons who reported smoking, the most frequent age of onset was 15 to 20 years; currently 69% of them smoke daily; 33% smoke less than 5 cigarettes per day and another 33% smoke 5 to 10 cigarettes per day (Tabe 5).

Regarding the consumption of alcoholic beverages, 50% reported having consumed an alcoholic beverage at some time, the other 5% did not, of those who reported consumption, 54% reported having consumed within the last month; as for the frequency of consumption, 48% reported once a month and 35% once a week (Table 6).

Regarding dietary habits, 43% reported fruit consumption 2 to 4 days a week, 40% daily; 90% daily vegetable consumption; 55% reported never adding salt to the food served, 37% reported sometimes; 62% reported consuming just the right amount of salt with meals; 48% reported eating fried foods 2 to 4 days a week, 35% once a week; 62% reported eating meat 2 to 4 days a week (Table 7).

Regarding the practice of physical activity, 51% do not practice any physical activity; of those who do practice some activity 83% report walking; as for frequency 48% report 2 to 3 days per week; 55% dedicate 30 minutes to 1 hour of time (Table 8).

Table 4. Distribution of surveyed inhabitants, according to socio-demographic data. Espinillo Company - Coronel Oviedo, 2022

SOCIO – DEMOGRAPHIC DATA	N°	%
Age group*		
20-29	46	33
30-39	36	26
40-49	24	17
50-59	19	13
60-69	7	5
70-79	9	6
Sex*		
Femenine	103	73
Masculine	38	27
Civil status*		
Married	49	35
Separated - Divorced	2	1
Single	31	22
Widowed	5	4
Living as a couple	54	38
Schooling*		
None	3	2
Basic School Education	67	48
Average level	50	35
University	21	15
Occupation*		
Farmer	1	1
Builder	6	4
Housewife	94	67
Trader	5	4
Unemployed	1	1
Private employee	10	7
Student	1	1
Public Officer	3	2
Self - employed	20	14
Family Income*		
Less than mínimum wage	111	79
Minimum wage	20	14
More than mínimum wage	10	7

Source: Survey conducted by FENOB Nursing students *n=141.

Regarding personal history of HTN, 68% report that they have never been told by a physician or other health professional that they have high blood pressure; 78% do not receive treatment with medication for high blood pressure; 70% do not consume traditional (pohañana) medication for high blood pressure (Table 8).

Regarding personal history of diabetes, 84% report that they have never been told by a doctor or other health professional that their blood sugar level is high; 87% do not receive treatment with

Table 5. Distribution of surveyed population, according to tobacco consumption. Espinillo Company - Coronel Oviedo, 2022

TOBACCO CONSUMPTION	N°	%
Smoked any tobacco product (cigarettes, cigars)*.		
Yes	13	9
No	128	91
Starting age		
< 15 years	2	15
15 to 20 years	8	62
>20 years	3	23
Currently, smokes daily		
Yes	9	69
No	4	31
How many cigarettes do you smoke daily		
Less than 5	3	33
From 5 to 10	3	33
From to 10	1	11
More than 20	2	22

Source: Survey conducted by FENOB Nursing students *n=141

medication for having diabetes; 82% do not consume traditional (pohañana) medications for diabetes.

Regarding family pathological history, 55% reported a family history of high blood pressure, 40% a history of diabetes (Figure 1).

Table 6. Distribution of surveyed population according to consumption of alcoholic beverages. Espinillo Company - Coronel Oviedo, 2022

CONSUMPTION OF ALCHOLIC BEVERAGES	N°	%
Have you ever consumed any alcoholic beverage (beer, wine, white cane, whiskey, liquor)*		
Yes	71	**50**
No	70	**50**
Have you consumed any alcoholic beverages within the last month?		
Yes	65	**46**
No	76	**54**
In the last month, how often have you had at least one alcoholic drink?		
Once a month	31	**48**
Once a week	23	**35**
2-4 days per week	11	**17**

Source: Survey conducted by FENOB Nursing students *n=141

Table 7. Distribution of surveyed inhabitants, according to eating habits. Espinillo Company - Coronel Oviedo, 2022

DIETARY HABITS	N°	%
Fruit consumption*		
Daily	56	40
5-6 days per week	5	4
2-4 days per week	60	43
Once a week	19	13
Does not consume	1	1
Vegetables consumption*		
Daily	127	90
5-6 days per week	3	2
2-4 days per week	9	6
Once a week	2	1
Add salt to the food served*		
Never	78	55
Sometimes	52	37
Always	11	8
How much salt do you consume with meals*		
Too Little	6	4
A little	39	28
A lot	6	4
Very Much	2	1
Just the right amount	88	62
Consumption of fried foods*		
Daily	14	10
5-6 days per week	11	8
2-4 days per week	67	48
Once a week	49	35
Meat consumption*		
Daily	29	21
5-6 days per week	17	12
2-4 days per week	87	62
Once a week	8	6

Source: Survey conducted by FENOB Nursing students *n=141.

Regarding the evaluation of nutritional status, 39% of the surveyed population had normal weight according to BMI, while 33% were overweight, 16% had phase I obesity, 9% phase II obesity and 3% phase III obesity.

As for the evaluation of cardiovascular risk according to waist circumference, 40% were found to be at very high risk, 29% normal and 28% high risk. (Figure 3).

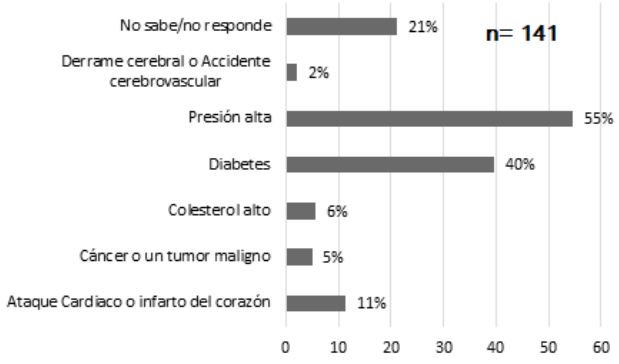
As for the classification according to blood pressure values, 44% present high normal blood pressure, 30% normal blood pressure, while 17% present grade I arterial hypertension

Table 8. Distribution of surveyed population according to the practice of some type of physical activity. Espinillo Company - Coronel Oviedo, 2022

PHYSICAL ACTIVITY	N°	%
Practice any physical activity*		
No	72	51
Yes	69	49
Activity it perfoms		
Bicycle	3	4
Hike	57	83
Sports (Soccer, volley)	7	10
Exercises	2	3
Frequency		
1 day per week	6	9
2 to days per week	33	48
4 to 5 days per week	8	12
Daily	22	32
How much time spend		
Less than 30 min	20	29
30 min to 1 hour	38	55
More than 1 hour	11	16

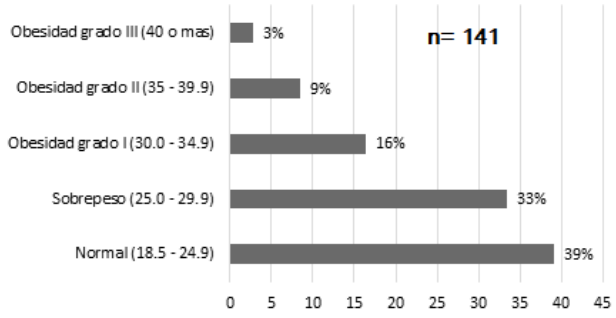
Source: Survey conducted by FENOB Nursing students *n=141.

Figura 1. Distribution of surveyed residents, according to family medical history. Espinillo Company – Coronel Oviedo 2022



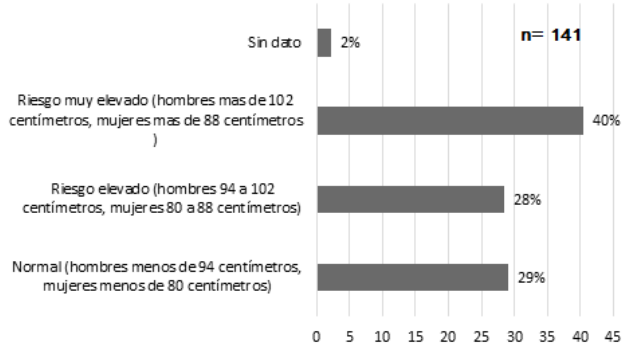
Source: Survey conducted by FENOB Nursing.

Figura 2. Distribution of surveyed residents, according to the assessment of nutritional status by BMI. Espinillo Company– Coronel Oviedo, 2022



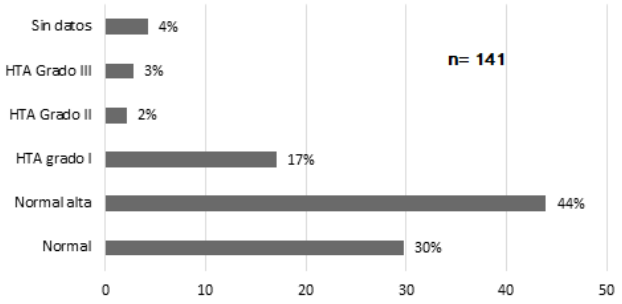
Source: Survey conducted by FENOB Nursing.

Figura 3. Distribution of surveyed residents, according to the assessment of cardiovascular risk by waist circumference. Espinillo Company – Coronel Oviedo, 2022



Source: Survey conducted by FENOB Nursing students *n=141.

Figure 4. Distribution of surveyed residents, according to the classification. Espinillo Company – Coronel Oviedo, 2022



Source: Survey conducted by FENOB Nursing students *n=141.

Discussion

Regarding the sociodemographic data of the surveyed villagers, the average age was 39.5 years and the female sex prevailed (73%), while in the study by González Galeano et. al (2014), on cardiovascular risk factors in a young population also carried out in a community of Coronel Oviedo, the average age was lower, 29 years, and the distribution according to sex was 63% female and 37% male. In the study by Rosa Bordón and Saldaña de Gutiérrez (2017), whose objective was to determine the frequency of cardiovascular risk factors in the adult rural population, attending in the USF of the district of Capitán Miranda - Itapúa year 2017,the average age was very similar, 40±20 years and 66% of the participants were women. In most of the studies the female sex prevails taking into account that it is generally women who are left at home at the times that home visits are carried out for the surveys.

Regarding the risk factors studied, what concerns tobacco consumption, the vast majority refer not to consume (91%). The study by Rosa Bordón and Saldaña de Gutiérrez (2017) reports similar data since 88% do not smoke. Likewise, with respect to the consumption of alcoholic beverages, 50% report having ever consumed an alcoholic beverage. In the work of Piñanez de Franco (2017), carried out in the Acaraymi community, Alto Paraná, the following data were reported: smoking habit 31%, alcohol consumption is 28.7%.

Regarding dietary habits, there was a low consumption of fruits on a daily basis, only 40% reported daily consumption; high consumption of fried foods (48% 2 to 4 times a week) and meat (62% 2 to 4 times a week). These data are similar to what was found by Piñanez de Franco (2017), who reports in his work an excessive consumption of oil, low consumption of fruits and vegetables and adequate consumption of animal protein.Regarding the practice of physical activity, just over half do not practice any physical activity. The study by Rosa Bordón and Saldaña de Gutiérrez (2017), reports similar data as 88% do not practice physical activity.

In relation to the evaluation of nutritional status, the majority were overweight (33%) and obese (28%) to varying degrees. Jiménez et. al (2021) in the study “Prevalence of obesity and other cardiovascular risk factors in a rural population of Paraguay” found very similar data, overweight/ obesity in 52.3% (33.8% overweight and 18.5% obese).

Regarding personal history of hypertension and diabetes, the majority reported no history, that is, they had never been told by a physician or other health professional that they had high blood pressure or that their blood sugar level was high; however, regarding family pathological history, hypertension (55%) and diabetes (40%) stood out, as in the study by Jimenes et al (2021), where 52.2% had a family history of hypertension

and 30.1% had DM.

Regarding the evaluation of cardiovascular risk according to waist circumference, those with very high risk (40%) and high risk (28%) prevailed. Similar data to the study by Rosa Bordón and Saldaña de Gutiérrez (2017), where 39% of patients also presented high cardiovascular risk according to waist circumference. Finally, with regard to the classification according to blood pressure values, 22% of the people presented HT of different levels, as did the study by González Galeano et. al (2014), where 21% were shown to suffer from arterial hypertension.

Conclusions

The data found allow us to conclude that the population studied presents cardiovascular risk characteristics. Despite being a young population, there is a high percentage of overweight/obesity and lifestyles that should be improved, especially with regard to eating habits and the practice of physical activity.

These results will serve as a baseline in order to implement strategies aimed at the population under study, through university extension projects promoted by the FENOB, in order to improve eating habits, accompanied by physical activity and adequate diagnosis and treatment of the cases of arterial hypertension detected in this study.

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Korasõmba’asy jeguereko Espinillo Tava’ípe, Coronel Oviedo Távape-Paraguay, 2022

Mombyky

Mbo’epy, tembikuaa ha mbo’eahovusu jeipysove ojokupytýva tava’i rehe heñói pe apopyrã ojeheróva “Tekoporã ha tembiresãi Espinillo távape FENOB poguýpe”. Ojejesarekóvo ko apopyrãme, heñói pe tekotevẽ ojeguerekóramo peteĩ ñemopyenda, upéicha rupi pe ñehesa’ỹijo ohupytyséva oha’ãngahai umi mba’éicha rupípa ikatu ojeguereko korasõmba’asy tekovepyahu ha kakuaa ryepýpe tava’i Espinillo-pe, 2022 arýpe. Pe ñehesa’ỹijo ojeguerekóvakuri ha’e pe ipapapyrekóva, ijesarekokatúva, oñeha’ãngahaíva. Pe tenda oĩhápe 1969 tavayguára (tekovepyahu, kakuaa, ha kakuaa ika’aruvémava) ha atyvorékatu 141 yvypóra. Pe ñeporãndu noñemoneĩkatukuaáiva, marandu ñembyaty oĩkuri temimbo’ekuéra aporekokuaahára 5° ha 7° semestre-pegua carrera de enfermería FENOB-pegua poguýpe. Ojejapókuri porandueta, ojeiporúvo tembiporu peteĩ kuatia ñeporãndu oñemoheñóiva upearã. Umi marandu ojejuhúva oheja oñemohu’ã ha oje’e umi yvypóra tavaygua oñehesa’ỹ ha’éva tekijóva oguerekoha apañuái korasõmba’asygua. Ha’éramojepe tavygua ipyahúva, ikatuvehína ha’ekuéra oguereko pe kyravai ha umi hekove oñemoporãveva’erã, katuete umi ijekaru ha teteku’e rupive.

Ñe’ẽteete: hasykuaáva, korasõmba’asy, tavayguára.