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SOCIAL DETERMINANTS OF HEALTH AND CHRONIC DISEASES POST COVID-19. SALINAS. ECUADOR, 2023

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Abstract: The social determinants of health play a crucial role in the appearance and evolution of chronic diseases, so Covid-19 generated an imbalance in the health and well-being of people. It was possible to analyze the social determinants of health and their relationship with chronic diseases post Covid-19. A descriptive cross-sectional correlational study was carried out in 2 parishes of the Salinas canton of the province of Santa Elena in the year 2022-2023. The universe was 71 inhabitants (Anconcito-Santa Rosa) and the sample was represented by 61 participants, adjusted to the inclusion criteria. The observational method and the applied survey were used. The variables were: social determinants of health and chronic diseases. The data were analyzed using Minitab 21.3 (descriptive statistics and 95%CI and SPSS 26.0 (Pearson's chi-square test (r). The 62.0% were women with primary education (69.0%), the economic income was less than 400 dollars (86.2% Santa Rosa) and Anconcito similar results, there was statistical significance between the variables mainly risk for arterial hypertension (p=0.03), osteoporosis (p=0.02) and BMI (p=0.05), 48.3% perceived a moderately adequate social, family and ecological environment and life styles insufficient to personal needs. Social determinants of health significantly influence health, care, well-being and evolution of chronic diseases during the post Covid-19 period.
Keywords: Covid-19; Social determinants; chronic diseases; health

INTRODUCTION

The Covid-19 pandemic has had a significant impact on global health, triggering not only a health crisis, but also profound implications for the social determinants of health (DSH), decompensation of pre-existing chronic diseases and the emergence of new

ones, Therefore, the interaction between social, economic and environmental factors has influenced during and after the pandemic, making it possible to understand and address these DSS to mitigate the long-term effects of Covid-19 on the health of populations.

World Health Organization,(2020), highlights that the relationship between the DSS and post-Covid-19 chronic diseases has aroused growing interest in the scientific community and in those responsible for formulating health policies. It has been shown that socioeconomically disadvantaged groups, with limited access to health services, precarious housing, and unstable employment, are more vulnerable to chronic diseases, both in the context of the pandemic and in their subsequent recovery.

Naipe Delgado et al., (2020), suggest that, in this sense, a transdisciplinary approach is required that considers not only biomedical aspects, but also socioeconomic, cultural, and environmental factors that influence people's health. It is essential to adopt intervention strategies and public policies that comprehensively address the DSS, promoting equity and universal access to medical care and the necessary resources to prevent and manage chronic diseases in the post-Covid-19 scenario.

In addition, the development of chronic non-communicable diseases in the Ecuadorian population is evidenced by the different sociocultural factors that affect the biopsychosocial health of an individual. Therefore, the present study will serve as a guide for future scientific research in order to reduce the cases of chronic non-communicable diseases and to improve the individual, family and community health of the population, as reaffirmed(Antoñanzas Serrano Luis Andrés, Gimeno Feliu, 2022).

Understanding how these determinants influence the health of populations is crucial to address public health challenges in the post-Covid-19 period. These conditions are related to the life course, which reveals the individual and social life history of people with the interaction of the socio-structural and the socio-symbolic, so this study will allow us to analyze the DSS and their relationship. with chronic diseases post Covid-19.

METHODOLOGY

A descriptive correlational cross-sectional study was carried out in 2 parishes of the Salinas canton of the province of Santa Elena in the year 2022-2023. The universe of study was comprised of 71 residents of the Anconcito and Santa Rosa parishes, taking 61 participants as a sample, calculated using the CuestionPro statistical software, for which the confidence level (95%) and the margin of error (5 %), adjusted to the inclusion criteria.

The research is part of the research project "Sociocultural determinants of the health situation and self-care behaviors in response to Covid-19, in parishes of the Salinas canton. period 2022-2024" as the governing body of all those activities carried out by the Nursing Career of ``Universidad Estatal de la Península de Santa Elena`` and the municipal GAD. The information acquired from the 2 parishes was obtained through the survey, a data collection instrument, which was carried out on the residents. For the study, different variables were used, such as: gender, level of educational instruction, economic income, family physical environment, social environment, life styles, self-care, FANTASTIC questionnaire, access to health services and modifiable risk factors.

For the application of the survey, the CASPER method was used, made up of three teams of interviewers, and two leading participants who remained at the headquarters to collect the information obtained, clarify doubts and contribute with some necessary material for the investigation. For the selection

of households, it was necessary to consider a meeting point so that the selected family could be quantified every 5 households, which allowed progress in some blocks of the parish. The data were analyzed using the statistical programs Minitab 21.3 (descriptive statistics and 95% CI for μ) and SPSS 26.0 (Pearson's chi-square test (r). The study did not present conflicts of interest.

RESULTS AND DISCUSSION

Within the main sociodemographic characteristics, a sample of (n=29 SR) Santa Rosa and (n=32 A) Anconcito was evaluated, since there was a predominance of the female sex in both parishes with (62% and 53% respectively). Regarding the level of educational instruction, the primary level (69% SR) and (56% A) prevailed, followed by secondary 34% and only 9.4% of the participants were without schooling. Unlike the SR parish where a minority did reach a university level by 6.9%. However, the economic income of most families ranged between ($400 SR 86.2% $600 A 100%) dollars per month, somewhat insufficient, due to the number of members who share the family nucleus. See table 1.

When evaluating the sociocultural determinants of the health situation in the SR community, a familiar physical environment of 48.3% was found, physical social 51.7% considered as slightly adequate. Regarding access to health services, most of the participants stated that they are slightly adequate with 48.3% and only 41.4% considered it adequate. However, the residents of Anconcito responded that they had a moderately adequate family physical environment (53.1%), a slightly adequate physical and social environment (68.8%), and in terms of access to health services, 46.9% of the participants feel the need for these services to be expanded in order to guarantee better

care in accordance with community needs, while 31.3% appreciated it moderately and only 21.9% considered it adequate.

On the other hand, when measuring life styles, it was found that 41.4% of the SR sample considered being moderately adequate, 37.9% slightly adequate, and only 20.7% considered it adequate. In contrast, the participants from Anconcito presented moderately adequate life styles in 46.9%. On the other hand, the level of self-care obtained from the "Fantastic" instrument showed that 55.2% considered self-care not fantastic, followed by 27.6% who said it was adequate. However, in Anconcito, 43.8% presented little fantastic self-care, followed by 40.6% adequate and only 12.5% deficient, represented in Table 2.

When analyzing the modifiable risk factors, it was found that in SR there was a significant relationship with Diabetes Mellitus in 72.4%, where the participants stated that if they had the disease they did not know it and 69% of them presented a high risk of developing it. suffer the disease. However, in Anconcito, 81.3% of participants stated that they did not have diabetes, but 78% were at risk of suffering from it.

Regarding the body mass index (BMI), 41.4% of the participants in SR and 37.5% in Anconcito were overweight, (17.2% SR and 12.5% A) presented grade I obesity and only 12.5% of them in Anconcito had grade II obesity. However, in both communities there was a low percentage with grade III obesity reflected in the (6.9% SR and 3.1% A) respectively. On the other hand, the condition of normal weight reached values of 34.5% in the respondents from both parishes.

Therefore, in relation to cardiovascular risk, the majority of the participants from both communities did not show any risk, while the (96.6% SR and 96.9% A) argued to monitor the disease, the treatment and the respective controls. Also in response to blood pressure it

| | Parishes | | | |
| | Santa Rosa (n=29) | | Anconcito (n=32) | |
	no	%	no	%
Gender				
Male	11	38	15	47
Female	18	62*	17	53*
Educational Level of Instruction				
Without schooling	0	0	3	9.4
Primary	20	69.0	18	56.3
Secondary	7	24.1	11	34.4
Academic	2	6.9	0	0
Economic income				
Less than 400	25	86.2		
401 to 600	2	6.9	32	100
601 to 800	1	3.4		
801 to 1000	1	3.4		

Table 1: *Sociodemographic characteristics of the study sample. Santa Rosa and Anconcito Community.*

Note: Female predominance (62% and 53% for Santa Rosa and Anconcito)

| | Santa Rosa (n=29) | | Anconcito (n=32) | |
	no	%	no	%
familiar physical environment				
Slightly adequate	14	48.3	9	28.1
Moderately adequate	7	24.1	17	53.1
Appropriate	8	27.6	6	18.8
social physical environment				
Slightly adequate	15	51.7	22	68.8
Moderately adequate	10	34.5	9	28.1
Appropriate	4	13.8	1	3.1
Life styles				
Slightly adequate	11	37.9	14	43.8
Moderately adequate	12	41.4	15	46.9
Appropriate	6	20.7	3	9.4
Access to health services				
Slightly adequate	14	48.3	15	46.9
Moderately adequate	3	10.3	10	31.3
Appropriate	12	41.4	7	21.9
Self care, FANTASTIC quiz				
Deficient	4	13.8	4	12.5
Appropriate	8	27.6	13	40.6
A little fantastic	16	55.2	14	43.8
Fantastic	1	3.4	1	3.1

Table 2: *Sociocultural determinants of the health situation. Santa Rosa and Anconcito Community.*

Note: Instrument applied.

	Santa Rosa (n=29)		Anconcito (n=32)	
	no	**%**	**no**	**%**
He claims to have diabetes and did not know it				
Yes	21	72.4	6	18.8
No	8	27.6	26	81.3
Diabetes Risk				
Low risk	9	31.0	7	22
High risk	20	69.0	25	78
Blood glucose values				
Glycemic norm	6	20.7	13	40.6
Prediabetes	17	58.6	12	37.5
Diabetes	6	20.7	7	21.9
Body Mass Index (BMI)				
Normal	10	34.5	11	34.4
Overweight	12	41.4	12	37.5
Obesity I	5	17.2	4	12.5
Obesity II	0	0	4	3.1
Obesity III	2	6.9	1	
Blood Pressure Values (BP)				
Optimal	12	41.4	8	25.0
Normal	7	24.1	7	21.9
border	4	13.8	3	9.4
Stage I	3	10.3	10	31.3
Stage II	0	0	4	12.5
Stage III	3	10.3	0	0
High blood pressure risk				
Yes	2	6.9	6	18.8
No	27	93.1	26	81.3
Risk evaluation				
Risk free	28	96.6	25	78.1
With risk	1	3.4	3	9.4

Table 3: *Distribution of some modifiable risk factors. Santa Rosa and Anconcito communities.*

	Fantastic		Life style		Access to health services		social physical environment	
	Chi	p	Chi	p	Chi	p	Chi	p
Level of instruction	7.31	0.29	3.05	0.55	5.42	0.23	670	0.15
Blood pressure	11.47	0.49	14.22	0.76	17.15	**0.03**	8.15	0.42
Heart disease	1.51	0.68	1.17	0.56	3.68	0.16	2.64	0.27
Embolism	1.51	0.68	1.17	0.56	3.68	0.16	2.64	0.27
AHT	5.78	0.13	0.77	0.68	0.96	0.62	0.31	0.86
Diabetes	2.57	0.46	0.62	0.73	3.46	0.18	6.94	**0.03**
Osteoporosis	3.12	0.37	2.42	0.30	7.62	**0.02**	0.54	0.76
BMI	14.21	0.29	6.40	0.60	15.21	**0.05**	38.68	**0.00**
Full risk	8.17	0.23	5.49	0.24	3.85	0.43	11.44	**0.02**

Table 4: *Relationship between social determinants and chronic diseases Anconcito Community.*

	FANTASTIC		Life style		Access to health services		social physical environment	
	Chi	p	Chi	p	Chi	p	Chi	p
Level of instruction	5.67	0.46	4.57	0.34	7.24	0.12	6.97	0.14
Blood pressure	13.16	0.36	8.22	0.41	9.88	**0.27**	9.17	0.33
AHT	2.72	0.44	3.52	0.17	3.04	0.22	0.45	0.80
Mellitus diabetes	1.23	0.74	1.29	0.53	7.47	**0.02**	1.28	0.53
Osteoporosis	6.47	0.09	1.70	0.43	1.47	0.48	0.97	0.62
BMI	4.80	0.85	5.09	0.53	6.04	0.42	4.28	0.58
Full risk	2.72	0.44	1.70	0.43	1.47	0.48	1.97	0.37

Table 5: *Relationship between social determinants and chronic diseases. Santa Rosa Community*

	BMI Santa Rosa		BMI anconcito	
	Chi	P	Chi	p
Blood glucose values	6.71	0.35	4.92	0.76
Blood pressure	14.23	0.29	20.49	0.20
Heart disease	13.98	**0.00**	7.22	0.12
Embolism	4.97	0.17	7.22	0.12
AHT	6.94	0.07	3.61	0.43
Presence of Diabetes	6394	0.07	12.90	**0.01**
Osteoporosis	1.47	0.69	14.99	**0.01**
Diabetes risk	11.40	**0.01**	28.11	**0.00**
Glycemia	6.75	0.35	4.92	0.77

Table 6: *Relationship between BMI and modifiable risk factors. Santa Rosa and Anconcito communities.*

was possible to show that in SR 65.5% and in Anconcito 46.8% of the participants presented blood pressure figures between optimal and normal; while 20.6% of them were between stage I and III of the disease when obtaining (10.3% for each line) and only 18.8% showed risk of suffering arterial hypertension. Finally, the general evaluation of the risk showed that (96.6% of SR and 78.1% of A) did not present modifiable risks in the categories analyzed. See table 3.

To establish the relationship between social determinants and chronic diseases, the Pearson Chi Square statistic was applied, crossing variables, finding statistically significant results in the SR community, between access to health services and blood pressure. (p=0.03), osteoporosis (p=0.02) and BMI (p=0.05) at 95% confidence. See Table 4.

In the same way, the relationship between the DSS and chronic diseases was sought, finding a statistically significant relationship between access to health services and the risk of suffering from Diabetes (p=0.02) with 95% reliability in SR. See table 5.

However, in SR, BMI was related to modifiable risk factors by applying Pearson's Chi-square, obtaining statistical significance for the variables: heart disease (p=0.00) and risk of Diabetes (p=0.01). and 95% reliability. While in Anconcito, significance was obtained between BMI and disease (p=0.01), osteoporosis (p=0.01) and risk of diabetes (p=0.00) at 95% CI. (Table 6)

DISCUSSION

Health is an aspect resulting from the confluence of different determinants, such as individual, economic, social, environmental and cultural factors that converge to determine health/disease profiles. Frequently, the studies carried out on health only emphasize biological factors, sociocultural ones to a lesser extent, and many leave aside chronic diseases, mainly after Covid-19, for which reason(Jimenez Barbosa et al., 2019)point out that cultural factors can be a positive factor for change or an obstacle to achieving health.

Other responses to the risk of suffering Diabetes Mellitus is due to the increase in blood sugar, which is due to the contribution of energy and oxygen that the body needs, as a source of energy (glucose) and this in turn through the pancreas. releases the hormone called insulin, which makes it easier for glucose to be converted into energy through the body's cells, which is why there must be a healthy diet and an active life style in order to prevent the risk factor that causes the Mellitus diabetes(Fernández-Feito et al., 2020).

Also,Antoñanzas Serrano, LA. & Gimeno, F. (2022)studied in Spain the social determinants and their influence on people's health through exploratory systematic review and obtained as results the impact that these have on chronic diseases, through variables such as: racial or ethnic group, socioeconomic level, education, occupation, urban or rural residence and health conditions, concluding that inequalities generate health consequences that may be unnecessary, avoidable and unfair, something that coincides with the study carried out.

On the other hand, the sociodemographic characteristics could be contrasted with what was stated by (Jiménez Barbosa et al., 2019), in Colombia, which mentions that certain socioeconomic conditions favor the appearance of diseases and harmful behaviors, due to the lack of necessary food and inadequate eating habits that significantly influenced living conditions.

However, it could be inferred that education is an important source of social and psychological resources that significantly influences the health status of people, which means that the higher the educational level, different habits and preferences, however, the

data obtained are related to the study carried out by (Gómez David, 2020) where they express that the level of educational instruction does play a key role in the individual's acting responsibly and consistently, as a protective and corrective factor for social inequalities at any stage of life. life.

As regards the comorbidity between arterial hypertension and diabetes mellitus, several studies, including that of(Naipe Delgado et al., 2020), points out that arterial hypertension is frequent in diabetics and affects between 20 and 60% of the sick population", which coincides with the results of this study. Besides(Angel & Valdes, 2020), refer that it is interesting the appearance of new cases of Diabetes after the confinement as a consequence of the Covid-19, where unemployment, confinement and the lack of physical activity was the outcome of the poor state of health.

Likewise, the present investigation coincides with studies such as Espinosa et al., (2020) and Orfila & Mendez-Perez, (2022), where they consider that most chronic diseases significantly affect the lives of people who suffer from them. One of the main changes and perhaps the one that generated the greatest deterioration was the complications of diabetes, when the user presented obesity and overweight, where the frequency observed in this study reflected that it was a consequence of deficient life styles in 51% Therefore, in 2022 the World Health Organization reported that 75% of 163 Latin American countries reported interruptions in primary care services during the Covid-19 pandemic, a limitation that affected access to services, due to to less funding, postponed activities,which led to inequalities in health, according to(Fernández-Feito et al., 2020) and(De La Guardia Gutiérrez & Ruvalcaba, 2020).

CONCLUSIONS

It is concluded that the majority of the surveyed participants were women with completed primary education, receiving a salary mostly less than 400 dollars per month.

There was statistically significant confirmation in Anconcito between access to health services and blood pressure, osteoporosis and BMI, as well as in Santa Rosa between access to health services and the risk of diabetes mellitus, because both populations were at risk of being overweight, factors that predispose the development of chronic diseases and other health problems.

It was found that the social determinants of health significantly influence health, care, and the evolution of chronic noncommunicable diseases, mainly in the post-Covid-19 period, due to changes in people's life style, lack of access to health services, medical care and the interruption of prevention and treatment programs, which brought with it an increase in new diseases and the progressive development of pre-existing ones.

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