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Levels Of Preventive Care Provided By The Healthcare System In Chile

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Abstract

Background: The strategies for promoting cardiovascular health and preventing disease carried out in primary care centers are essential to mitigate the risks of illness and death from these causes. The COVID-19 pandemic intended to redirect economic efforts and human capital to exclusively contain this health problem, limiting the strategies for identifying risk factors for non-communicable diseases that are typical of established health strategies contemplated in the Preventive Medicine Examination (EMP), which is led by nursing professionals given their professional skills related to care, its application being an opportunity for the early detection of diseases, thus promoting the health and well-being of the population. The objective of the present research project is to analyze a series of official health services, related to activities derived from the EMP carried out on people over 15 years of age, in a time period between 2015 and 2022 obtained from publicly accessible databases, with the purpose of presenting an overview of the work carried out in the field of health promotion and disease prevention in primary health centers throughout the country, to contribute to the discussion about the importance of these public health functions and strengthen this level of healthcare in the future. **Method**: A longitudinal, correlational, descriptive study of the EMPs carried out between 2015 and 2022 in Chile, on the FONASA population aged between 15 and 60, using data obtained from the REM A02 data repository, the Department of Health Statistics and Information (DEIS) and the FONASA microsite, which is publicly available. **Results**: During this period, a considerable proportion of people registered with FONASA were not assessed for cardiovascular risk, despite the availability of professionals. **Conclusions**: Although these findings are worrying when considering a possible epidemiological scenario of significant increases in people with these pathologies, the present work represents an opportunity for the central administration to work on mitigating health measures, today.

Keywords Adult, preventive health services, outcome assessment, health care, cardiovascular diseases.

Introduction

1 Background

People with established cardiovascular disease (CVD) are at high risk of subsequent cardiovascular events, such as myocardial infarction (MI), stroke and death. Many people without established CVD are also at very high risk, such as those with metabolic syndrome, multiple risk factors, diabetes or chronic kidney disease. For all these high-risk patients, therapeutic lifestyle changes including increased physical activity, dietary modification/weight loss and smoking cessation have proven benefits and improve outcomes within a few weeks (1). These therapeutic guidelines are a priority at the primary level of health care, as this is where multidisciplinary efforts related to comprehensive health strategies for disease prevention and health promotion are concentrated (2).

The literature maintains that the healthcare provided in primary care to adults with high cardiovascular risk requires CVD prevention and healthy lifestyle promotion strategies characterized by programs aimed at reducing the morbidity of these conditions (3).

The importance of primary health care is seen as the cornerstone of a sustainable health system that will enable the achievement of Universal Health, the health-related Sustainable Development Goals (SDGs) and health security. 4 In this regard, health promotion and disease prevention activities are specific to primary health care (5, 6) and are essential for addressing the social determinants of health and for reducing health inequalities in collaboration with other actors (5, 7).

The global pandemic caused by the SARS-CoV-2 coronavirus generated unprecedented stress worldwide, not only in the health system but in society as a whole (8). Pandemic promotion and prevention as a fundamental part of primary health care needed to adapt in terms of its characteristic longitudinal care and accessibility (8), significantly slowing down the implementation of preventive and promotional activities, as well as presenting accessibility barriers and communication strategies that prioritized remote access. However, the pandemic presented an opportunity to reorient available health services towards the main health problems in the community at that time and to provide the promotion, prevention, treatment and rehabilitation services necessary to solve these urgent problems (9, 10).

In Chile, the social and health emergencies derived from the pandemic management meant a significant decrease in the follow-up and control of patients and in the diagnosis of chronic diseases (11), which represented a reduction in the annual incidence of chronic diseases such as arterial hypertension, hypercholesterolemia, type 2 diabetes mellitus and osteoporosis, among others. The decrease in these diagnoses was attributed to the organizational changes in Primary Care services (PC) to prioritize care for patients with COVID-19 (12-14).The prioritization of urgent and serious care for people with COVID-19 displaced care for patients with other chronic pathologies, limiting health promotion and disease prevention activities in adults (11-14).

The reorganization of health services in Chilean PHC in the face of the pandemic crisis meant adjusting the different procedures and protocols of clinical work carried out (Prono Vigil Procedure in Establishments Dependent on the Primary Care Directorate (ORD No. 0883); National Strategy for Testing, Traceability and Isolation (ORD No. B1 2469 TTA); Epidemiology Delegates (ORD No. B1 2365); Remote Healthcare (ORD No. C26 1886); Territorial Viewer for Active Case Search (ORD No. B51 2769). In addition, the budget allocated to PHC prioritized clinical work to meet the needs arising from the pandemic emergency, relegating the work in preventive and promotional matters of the population (RES EX 320), carried out according to protocol by the Preventive Medicine Examination (EMP) program at that level of health care. In response to this, the WHO and the PAHO warned at the time that this interruption of services could, in the long term, increase morbidity and mortality from preventable and treatable diseases. Even so, the clinical process carried out in PHC and required by the health crisis was maintained until the end of the pandemic health emergency, declared by the WHO on May 6, 2023.

The EMP is a periodic health monitoring and evaluation plan that is voluntary and free of charge. Its main objective is the early detection of preventable or controllable diseases, thus reducing the associated morbidity and mortality. The EMP is offered to all Fonasa and Isapres beneficiaries, including newborns, pregnant women and people over 15 years of age, depending on specific health problems. In the case of people aged 15 and over, the EMP focuses on detecting conditions such as problematic alcohol consumption, smoking, obesity, high blood pressure, diabetes mellitus, syphilis and tuberculosis. In addition, for women, cervical cancer screening is included for those between 25 and 64 years of age and breast cancer screening for those over 50. The PHE is requested in PHC for Fonasa beneficiaries and in the same insurers for those who are affiliated to Isapres. According to Resolution No. 876, 16 in Chile the nursing professional is responsible for carrying out the PHE given their professional skills related to care (17 – 19) its application being an opportunity for the early detection of diseases, thus promoting the health and well-being of the population (20).

Seen in this light, the objective of the present research project is to analyze a series of official health services, related to activities derived from the EMP carried out on people over 15 years of age, in a time series between 2015 and 2022 obtained from publicly accessible databases; with the purpose of presenting an overview of the work carried out in the field of health promotion and disease prevention in primary health centers throughout the country, in order to contribute to the discussion about the importance of these public health functions and strengthen this level of healthcare in the future.

2 Method

2.1 Design

A longitudinal, correlational, descriptive study of the Preventive Medicine Examinations (EMP) carried out between 2015 and 2022 in Chile, on the FONASA population between 15 and 60 years of age.

2.2 Data Collection, Extraction and Analysis Strategy

Data obtained from the REM A02 data repository, the Department of Health Statistics and Information (DEIS), 21 and the FONASA microsite, which is publicly available, were considered. 22 The data were tabulated by year from 2015 to 2022, determining the following independent and dependent variables.

2.3 Independent variables

Fonasa population with and without EMP, broken down by year, considering those corresponding to ages between 15 and 65 years old.

2.4 Dependent variable

Number of EMPs carried out annually, broken down by professional and their percentage deviation (PD). The PD measurement that allowed us to calculate the difference of an observed value in relation to another reference value, expressed as a percentage of the reference value (23). The reference value used was the year 2019, as it shows a priori growth in PMP results. The 2019 results therefore constitute a time point prior to the pandemic and subsequent periods of lockdown. The formula for calculating the percentage deviation is the difference between the observed value and the reference value, divided by the reference value, then multiplied by 100 (24). A linear regression analysis is performed to predict the number of Preventive Medicine Examinations based on the Fonasa population aged 15 to 60. These variables are assumed to be linear, normal, random in the sample and homogeneous in their variances.

2.5 Background Information Source

Chile, under the Health Authority Act 19.937, in Article 5 (25) specifies that the Ministry of Health handles data for statistical purposes and keeps data records. In this regard, the creation of the DEIS (24) incorporates information management functions and standards, including production statistics on the activities of establishments belonging to the public health system. This data is compiled through the REMs that each establishment periodically sends to the MINSAL, under the technical standard of "Health Information Standards" which establishes a DEIS code for each institution. This regulation is supported by Circular No. 2 of 2008, which establishes specific guidelines on the nomenclature and denomination of such establishments called DFL1 (26).

In accordance with the above, the REMs of care and/or population under control carried out in primary care centers are sent to the DEIS by establishments, individually reporting the REM Series A, BS, BM, P and D, as appropriate (27).

REM A02: "Preventive medicine examination for people aged 15 years and over", details the PHE carried out by professionals, and corresponds to the application of guaranteed health actions, which are recorded according to the sex of the patients attended, broken down by the professional carrying out the activity. The analyzed record corresponds to a performed PHE, that is to say, that in the examination the patient has been evaluated, classified by nutritional status, scales have been applied and examinations have been requested, regardless of the results of these. In addition, the same REM A02 includes an evaluation of nutritional status, an evaluation of health status according to blood pressure level and smoking habits, and preventive medicine examinations (blood glucose and cholesterol) (21).

3 Results

After the positive results in terms of EMP health checks between 2018 and 2019, the socio-sanitary crisis derived from the COVID-19 pandemic impacted on the implementation of EMP, as for the years 2020 to 2022, the EMP checks were almost completely replaced by activities derived from the health emergency (Table 1).

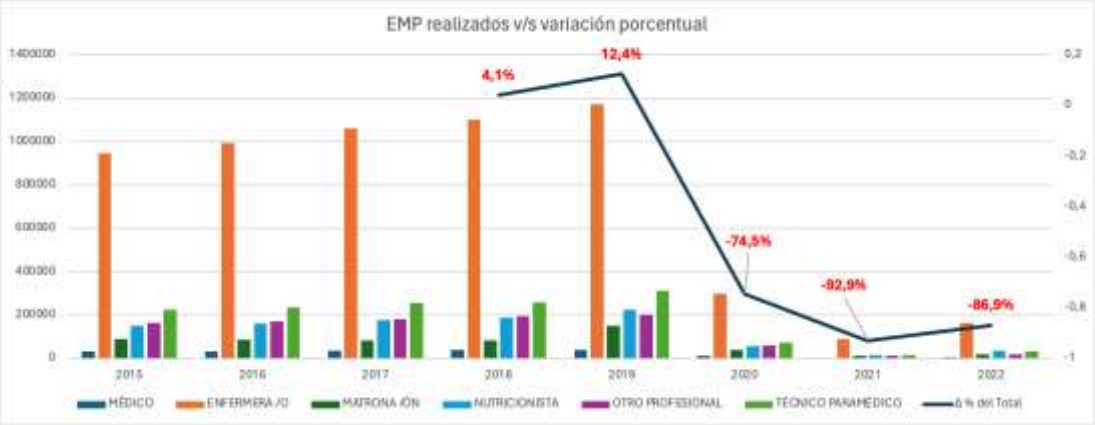

Figure 1. EMP controls and annual percentage variation. In original Spanish language

Source: Own elaboration, based on publicly available data.

Despite the responsibility held by nursing professionals to carry out EMPs according to Resolution No. 876; 16, the annual analysis reveals a maximum compliance of 89.8% for 2021 and a minimum of 85.1% in 2019 (Table 2). In addition, during the years of the pandemic, although the proportion of the Fonasa population that underwent an EMP decreased by about 10 times compared to previous years, the proportion of professionals who underwent this examination increased during the same years of the pandemic (Table 3).

Figure 2. Proportion of EMP controls carried out by professionals. **In original Spanish language**

Source: Author's own, based on publicly available data.

Table 1. Description of Fonasa (National Health Fund) population with performed PHEs.

Years	Fonasa population 15-60 years old	EMP realized	% Fonasa population with EMP
2015	7.586.787	1.604.969	21,2%
2016	7.799.789	1.676.281	21,5%
2017	8.114.561	1.789.076	22,0%
2018	8.366.716	1.861.821	22,3%
2019	8.590.522	2.092.837	24,4%
2020	8.634.560	533.684	6,2%
2021	9.437.055	147.700	1,6%
2022	9.658.765	274.780	2,8%

Source: Own elaboration, based on publicly available data.

When associating the Fonasa population variable aged 15 to 60 and the PPMs carried out between 2015 and 2022, a correlation coefficient of 0.769 was obtained, indicating a strong positive correlation, which means that as one variable increases, the other tends to increase (Figure 1). The analyzes also show a coefficient of determination of R2 of 0.59, revealing a statistically significant relationship between the variables, where 59.23% of the EMPs are explained by the Fonasa population between the ages of 15 and 60. The linear regression equation; Y = 8466637+ -0.8458 X, has a negative coefficient, indicating an inverse relationship between variables, that is, the greater the number of Fonasa members, the fewer the number of PPMs carried out.

Estadísticas de la regresión								
Coeficiente de correlación múltiple	0,769579847							
Coeficiente de determinación R^2	0,592253141							
R^2 ajustado	0,524295331							
Error típico	544468,3973							
Observaciones	8							
ANÁLISIS DE VARIANZA								
	Grados de libertad	*Suma de cuadrados*	*Promedio de los cuadrados*	*F*	*Valor crítico de F*			
Regresión	1	2,58353E+12	2,58353E+12	8,715012	0,025542612			
Residuos	6	1,77868E+12	2,96446E+11					
Total	7	4,3622E+12						
	Coeficientes	*Error típico*	*Estadístico t*	*Probabilidad*	*Inferior 95%*	*Superior 95%*	*Inferior 95,0%*	*Superior 95,0%*
Intercepción	8466637,466	2452924,342	3,451650473	0,013605	2464547,823	14468727,1	2464547,823	14468727,11
Variable X 1	-0,845797973	0,286505287	-2,952119948	0,025543	-1,546851156	-0,1447448	-1,546851156	-0,144744791

Figure 1. Linear regression, variable: Fonasa and EMP populations. In original Spanish language

Source: Author's own creation, based on publicly available data

4 Discussion

The present research process has managed to account for significant percentage variations in the taking of the Public Management Exam (EMP) between the years 2015 and 2022.

The results of the EMP show that this exam is administered to less than 25% of beneficiaries, representing a challenge in terms of public policy (28, 29) as it is the only exam offered in the national public health network to all Fonasa beneficiaries, to detect conditions such as problematic alcohol consumption, smoking, obesity, high blood pressure and diabetes mellitus. Between 2015 and 2019, the percentage variations in PHE were close to 5%, unlike what happened between 2018 and 2019, when this percentage variation doubled. It can be estimated that by 2020, close to 30% of the FONASA beneficiary population would have a PHE.

Apparently, the pandemic situation generated a change in the previous positive trend of the EMP exams carried out by APS. During 2020, a percentage variation of -74.5% was obtained with respect to 2019, which corresponds to only 6.2% of the FONASA beneficiary population undergoing PHE, signifying a substantial cardiovascular risk capital for adults, as emphasized in national and international literature (30 – 32).

The proportion of PMPs performed by professionals during the pandemic period increased by 2 to 3 percentage points, which implies a sustained willingness to perform this task over time. However, it is regrettable that the flow of both the people and the professionals required to perform it was not available, generating the significant current gap. This scenario compromises EMP as an effective prevention tool, as early diagnosis and optimal treatment can reduce the development of CVD (33- 36).

With the arrival of COVID-19 in 2020, the first preventive measures against the infection were social isolation and prioritization of disease therapy at all levels of healthcare. In the case of PHC, the incentives were aimed at working on home clinical care and low-complexity hospitalizations, with staff hired and available to carry out these actions, not considering preventive activities for other diseases or health promotion activities specific to PHC. As highlighted in the literature, this is worrying because it is a concern that population groups with limited access to the health network, or with cardiovascular symptoms not treated in PHC, present certain preventable non-communicable diseases in varying time frames (37 – 40).

The main asset of public health is its professional teams. 37 The literature maintains that it is they who are called upon to facilitate and accelerate the recovery of lost public health gains, addressing the inequities of the impact of the pandemic; to promote the expansion of access and health coverage with a focus on equity; and to improve preparedness and response to future multi-risk emergencies, particularly future pandemics (33). In this regard, numerous barriers to accessing the health services included in PHC are also described for the pandemic period, such as the cancellation of consultations and elective medical procedures, the reduction in the provision of diagnostic services or even the fear of contamination by the virus when visiting a health establishment (41). Undoubtedly, the recognition of these limitations offers an opportunity to work on them and strengthen the role of PHC in health promotion and disease prevention.

The COVID-19 pandemic intended to redirect efforts to contain this health problem exclusively. In this, nursing professionals demonstrated leadership in decision-making processes related to patient care management (42 – 44). The role of the nurse in PHC in times of pandemic meant restructuring preventive and promotional care related to the application of EMP, to give way to timely clinical actions, through strategies of reorganization of tasks and functions through adaptation processes and the use of new technologies (43 – 45) reaffirming a great potential for leadership in complex times (46 – 49). In this, although nursing professionals managed to work on healthcare pressures, the post-pandemic process requires addressing complexities in mental health (50, 51) that keep not only their caregiving functions in tension, but all the caregiving roles that are their own: administration, management, education, research, and political participation.

5 Conclusion

The COVID-19 pandemic intended to redirect efforts to exclusively contain this health problem, limiting the strategies for identifying risk factors for non-communicable diseases that are specific to the EMP. During this period, a considerable proportion of people registered with FONASA were not evaluated in these areas. Although these findings are worrying when considering an eventual epidemiological scenario of significant increases in people with these pathologies, the present work represents an opportunity for the central administration to work on mitigating health measures today.

Data availability statement

The data supporting the findings of this study are available from the corresponding author, upon reasonable request.

Authorship statements

The authors Marie Jesie Carrillo; Mg. Ma. Angélica Saldías-Fernández, Denisse Parra-Giordano & Tania Rivera-Zúñiga participated in the conception and design of the study; analysis and interpretation of the data; writing of the article and critical review with important intellectual contributions; in addition to the approval of the final version for publication.

Conflict of Interest

The authors declare that they have no conflicts of interest.

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