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ABSTRACT

Introduction: The practice of cardiology in fragmented healthcare systems faces increasing structural pressures related to heavy workloads, inadequate compensation, and limited professional recognition. These factors negatively affect physician well-being, contribute to burnout, and pose challenges to workforce sustainability. In parallel, demographic changes characterized by the aging specialist population and the reduced influx of young physicians are generating concern regarding the future availability of qualified cardiovascular professionals.

Objective: The aim of this study was to evaluate cardiologists' perceptions of working conditions, income satisfaction, professional recognition, training pathways, and future career expectations, as well as to explore their association with demographic and occupational characteristics.

Keywords: cardiology. healthcare workforce. working conditions. professional burnout. health policy.

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Between Vocation and Burnout: Working Conditions, Training, and Career Prospects for Cardiologists in Argentina

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Introduction: The practice of cardiology in fragmented healthcare systems faces increasing structural pressures related to heavy workloads, inadequate compensation, and limited professional recognition. These factors negatively affect physician well-being, contribute to burnout, and pose challenges to workforce sustainability. In parallel, demographic changes characterized by the aging specialist population and the reduced influx of young physicians are generating concern regarding the future availability of qualified cardiovascular professionals.

Objective: The aim of this study was to evaluate cardiologists' perceptions of working conditions, income satisfaction, professional recognition, training pathways, and future career expectations, as well as to explore their association with demographic and occupational characteristics.

Methods: An observational, analytical, cross-sectional study was conducted using an anonymous, self-administered survey distributed nationwide between June and September 2023. The questionnaire, validated by an institutional ethics committee, consisted of 16 items grouped into three domains: relationship with scientific societies, professional recognition, working conditions, and continuing medical education. Demographic and occupational variables were also collected. Data analysis was performed with descriptive statistics and Pearson or Spearman correlation coefficient analysis, as appropriate, using Python 3.1.

Results: A total of 404 responses were analyzed, predominantly from more experienced cardiologists, reflecting an aging workforce. Younger professionals reported a heavier weekly workload, with a significant inverse correlation observed between age and hours worked ($r = -0.41$). Economic dissatisfaction was highly prevalent: over 70% of respondents expressed dissatisfaction with their income, and 95% felt that their remuneration did not adequately reflect their workload. Nearly half anticipated a worse economic situation within the next five years. Satisfaction with current income showed a positive correlation with future economic expectations ($r = 0.23$). Medical residency remained the preferred training pathway, while support for professional recertification was moderate and positively associated with greater economic satisfaction.

Conclusions: The practice of cardiology in fragmented healthcare systems is characterized by excessive workload, widespread economic dissatisfaction, and unfavorable future prospects, particularly among younger professionals. These conditions contribute to professional burnout and threaten workforce retention and generational renewal. It is essential to implement comprehensive health policies that address remuneration models, professional recognition, training structures, and physician well-being to ensure long-term sustainability of cardiovascular care in diverse healthcare settings.

Keywords: cardiology. healthcare workforce. working conditions. professional burnout. health policy.

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I. INTRODUCTION

Argentine cardiology is going through a critical period characterized by profound structural tensions, resulting from the interaction of demographic, economic, labor, and organizational factors. Within a historically fragmented healthcare system (1) (comprising public, social security, and private subsystems), there are coexisting heterogeneous care models that differ substantially in resource availability, financing schemes, and professional employment conditions. This fragmentation generates inequities in access to care, discontinuities in care processes, and increasing pressure on specialized human resources, particularly cardiologists, key players in the care of cardiovascular diseases, the leading cause of morbidity and mortality in Argentina.

Over the last decade, various reports from different scientific societies (2,3) have pointed to a progressive deterioration of working conditions in cardiology, evidenced by loss of purchasing power, the precariousness of contractual

relationships, and the increase in multiple job-holding. These are associated with higher levels of professional burnout, job dissatisfaction, and burnout syndrome, compromising the well-being of professionals, patients, and the sustainability of the healthcare system.

In parallel, there is sustained aging of the cardiology workforce and a lower rate of new generations entering the specialty, (4,5) a phenomenon that poses medium-and long-term risks. In this context, it is essential to systematically analyze cardiologists' perceptions of their work, economic, and educational realities, with the aim of generating evidence to guide healthcare policies for planning and holding human resources, and strengthening cardiovascular care in the country. (6)

II. METHODS

An observational, analytical, and cross-sectional study was conducted to evaluate different dimensions of cardiologists' professional practice in Argentina.

The study population consisted of cardiologists and cardiology residents who voluntarily completed an anonymous survey between June and September 2023. The questionnaire was self-administered and distributed via the Argentine Society of Cardiology (SAC) institutional email, as well as through social media and instant messaging channels (WhatsApp). Data collection was performed using the REDCap platform, in accordance with the SAC institutional recommendations.

A structured questionnaire, validated by the SAC Ethics and Research Committee, was used. It comprised 16 items organized into three domains:

1. Cardiologist relationship with the Scientific Society (5 questions),
2. Quality and professional recognition of cardiological practice (7 questions), and
3. Continuing medical education (4 questions).

Most questions used five-point Likert-type ordinal response scales (7). Additionally, demographic variables (age, gender) and employment variables

(weekly workload, perceived income) were collected to explore their association with the different domains evaluated.

Data analysis was performed using Python version 3.1. Qualitative variables were expressed as absolute frequencies and percentages, while quantitative variables were described using mean and standard deviation. Pearson or Spearman correlation coefficients were used to assess associations and correlations between variables, depending on the distribution and nature of the data.

The survey is available at the following link: <http://redcap.sac.org.ar/redcap/surveys/?s=HEWTKTPEKR978KJF>.

III. RESULTS

A total of 404 responses were recorded. The study population consisted of 398 (95%) cardiologists and 60 (14.9%) cardiology residents. Among the total number of respondents, 141 (34.9%) were female. Mean age was 54.6 ± 12.6 years. Nearly three-quarters of respondents (307, 76%) had more than 10 years of experience, and only 45 (11.1%) had up to 5 years, reinforcing the hypothesis of sustained aging of the specialized human resource. See Table 1.

Nearly half of respondents (195, 48.3%) practiced in metropolitan areas, reflecting a concentration of supply and resources, while peripheral regions remained underrepresented in this survey. Regarding the professional practice setting, the private sector accounted for the majority of professional activity ($\approx 68\%$), with residency programs being relevant but not universal (49.3% of centers offered cardiology residency). The majority of cardiologists (424, 105%) considered that the scope of care should focus on primary (prevention and promotion of cardiovascular health) and secondary (diagnosis and treatment of cardiovascular diseases) care. It should be noted that this question allowed for multiple responses, and only 36 (9%) replied that they should work exclusively in critical care areas. And although slightly more than half (209, 51.7%) were not part of a myocardial infarction care network, it was

observed that over 96% agreed with promoting such networks.

The economic satisfaction analyses revealed a strikingly homogeneous phenomenon: 285 (70.5%) respondents expressed dissatisfaction with their income, and approximately 384 (95%) disagreed with the statement that remuneration adequately reflects the amount of work performed. The population surveyed showed an average of 40 hours/week, with no significant differences in reported hours between women (42.2 hours/week) vs. 40.5 hours/week for men. The majority of respondents worked between 30 and 60 hours per week (approximately 65%), but a subgroup of at least 28 physicians (7%) worked more than 60 hours per week, with younger cardiologists exhibiting the highest working hours. This pattern was particularly evident in the boxplot of hours worked by age group (Figure 1). Almost half of the cardiologists surveyed (178, 44.8%) believed their economic situation will worsen in the next five years, and only one in fifteen (26, 6.5%) anticipated an improvement. Both women and men showed a high level of dissatisfaction. The assessment of adequate social and professional representation revealed that 377 respondents (93.3%) thought that cardiologists were underrepresented. See Table 2.

In relation to academic training, residency was considered the gold standard choice (363, 94%) with the current classic system consisting of one year of internal medicine plus three years of cardiology (260, 65.3%) while the choice of a post-basic system was relegated to 5 responses (1.3%). Concerning certification, only half of cardiologists (216, 54%) fully supported recertification, and 1 in 5 (21.6%) were against it. It could be interpreted that, in the case of income satisfaction and recertification, economic dissatisfaction was associated with greater rejection of recertification, but it predominated at all professional levels dissatisfied with their income. (Figure 2).

IV. DISCUSSION

The results of the study reveal a complex and multifactorial network that affects the

professional well-being of Argentine cardiologists. The structural element underlying most of these findings is the disconnection between workload and remuneration conditions in a fragmented healthcare system that forces professionals, especially younger ones, to hold multiple jobs in order to earn a reasonable income.

The association between age and working hours shows a significant negative correlation ($r = -0.41$), which expresses how increasing age is accompanied by a progressive decrease in weekly hours. This finding is not circumstantial, but rather reflects the way cardiology practice is structured in Argentina, where young professionals must have multiple jobs to achieve minimum income levels in a fragmented and outdated compensation system. (8,9) The correlation empirically supports a perception already documented in qualitative studies: working more does not improve the subjective sense of well-being. (10) This is also linked to the theory of physician burnout, which indicates that the uncoupling between effort and reward is one of the strongest predictors of emotional exhaustion and the idea to migrate or abandon clinical practice. In CONAREC's work (Argentine Council of Cardiology Residents), (11) 35% of residents met positive criteria for burnout, and a more recent survey of SAC cardiologists, including all ages, revealed that professionals under 40 and/or with less than 10 years in the specialty have significantly more burnout than their older colleagues: approximately 50% of those under 40 reported burnout vs. 28% of those over 40. (12) This situation, accompanied by the virtually unanimous perception of wage injustice, operates as a central determinant of professional discontent and is closely related to expectations. (13) In contrast, Argentine physicians of all ages continue to prefer residency as the best training system, despite its slow economic development due to the type of contract, salary and mainly the time that must be prioritized for study. (14,15)

In this regard, the correlation analysis between present satisfaction with income and future economic expectations showed a moderate positive coefficient ($r = 0.23$), indicating that present economic perceptions strongly influence

subjective projections of career development. Those who are currently more dissatisfied tend to anticipate deterioration in the next five years, a finding that has been observed in previous studies of the 2015 SAC policies area. (16) It is well known that this increases the risk of doctors leaving for countries with more favorable conditions, which hinders the possibility of structural reorganization of the medical system.

Another critical element of the study is the relationship between acceptance of recertification and economic satisfaction. The positive correlation found ($r = 0.13$) suggests that recertification, understood as a process of professional recognition, is more highly valued by those who perceive their economic situation as relatively more stable, which are mostly those with more than 20 years of cardiology practice. This relationship is important for the design of professional policies, as it shows that the legitimacy of recertification mechanisms depends in part on the professional's economic context.

V. CONCLUSIONS

The results of this national survey reveal a complex and worrying prospect regarding the professional practice of cardiology in Argentina. Quantitative evidence shows a consistent pattern: the profession operates in a context of excessive workload, widespread financial dissatisfaction, and predominantly negative perspectives regarding future income growth. (17) There is clear evidence that younger cardiologists work longer hours, often as a result of the need to hold multiple jobs to compensate for the frailty of the remuneration system. However, this intensification of work is not associated with an improvement in economic perception, which reinforces the feeling of structural devaluation and increases the risk of emotional burnout. Evidence of economic dissatisfaction directly affects the subjective projection of the profession, generating a vicious circle in which present precariousness fuels future pessimism. (18) This phenomenon, widely documented in healthcare environments in crisis, constitutes a vulnerability factor for the retention of specialists and the

incorporation of new professionals into the discipline.

At the same time, the relationship between acceptance of recertification and economic satisfaction shows that professional evaluation and updating processes cannot be considered in isolation from the work context. Where financial and symbolic recognition is insufficient, recertification runs the risk of being interpreted as an additional requirement with no actual benefit. These conclusions suggest that any recertification policy must be accompanied by professional development strategies, wage improvements and institutional support mechanisms, given that these are not currently required in healthcare institutions.

Another key finding is the aging of the cardiology workforce. The low representation of young professionals, coupled with their heavy workload and lower financial satisfaction, projects a scenario of risk for the future availability of specialists, particularly in regions with lower

jobs, devaluation, and lack of prospects may lead to an increase in medical emigration or a shift toward non-healthcare activities, thus deepening the generational gap.

Overall, the results of this survey highlight the urgent need to reconsider the conditions of professional practice in cardiology in Argentina. The implementation of fee reforms, the strengthening of union representation, the development of integrated healthcare networks, the expansion of quality training programs, and the establishment of professional welfare mechanisms are essential measures to ensure the sustainability of the specialty. Similarly, it is essential to generate active policies that encourage the entry and retention of young cardiologists, ensuring adequate generational turnover and equitable distribution of human resources throughout the country. This study is a valuable contribution to the design of such policies and to the construction of a more just, efficient, and humane healthcare system.

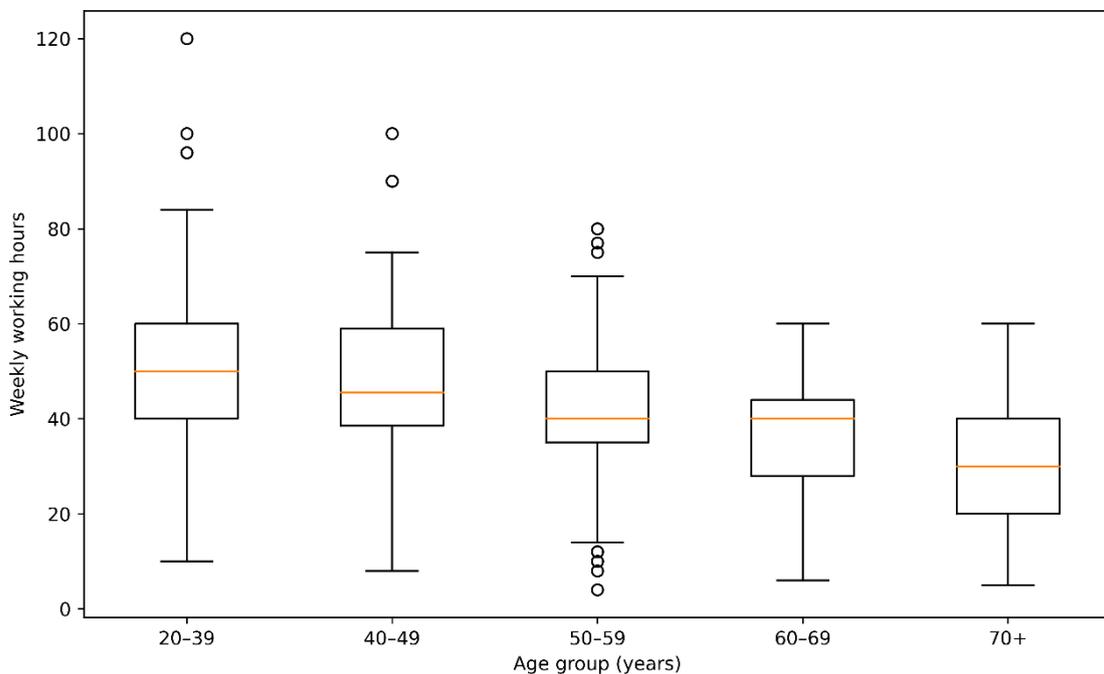


Figure 1: Boxplot of weekly hours per age group

Description: Professionals between 20–39 years of age present the highest workloads (median 50 h/week).

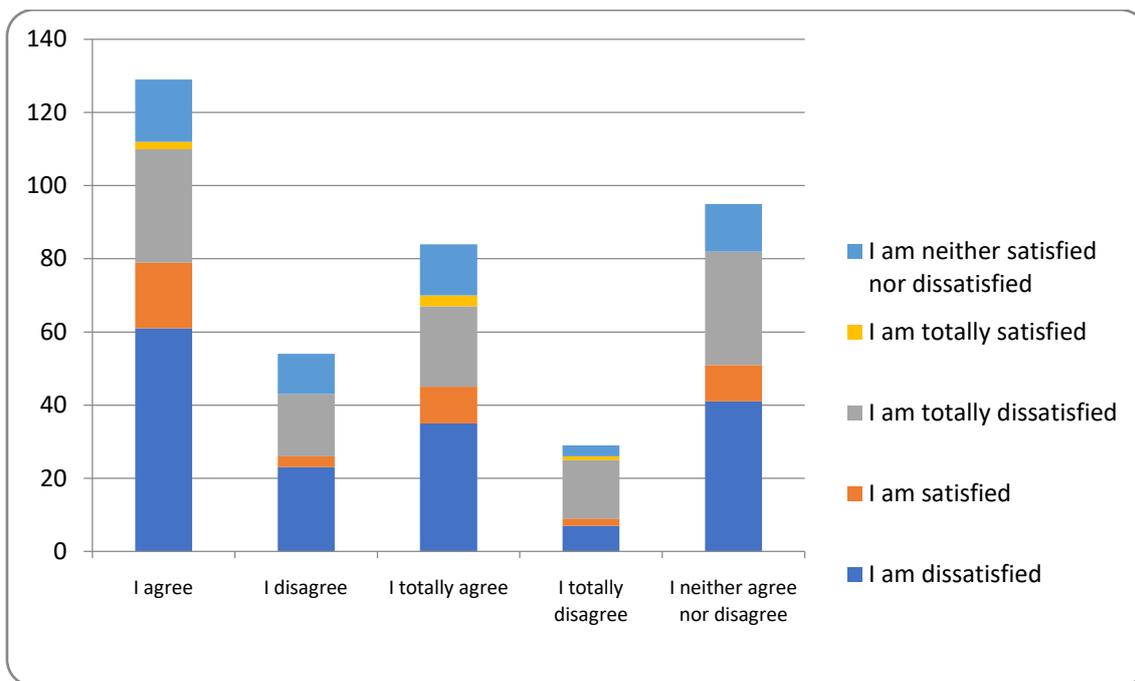


Figure 2: Relationship between certification and economic satisfaction

Description: Professionals who recertify are more economically satisfied.

Table 1: Demographic and working characteristics of the surveyed population

Variable	Result
Total number of surveyed cardiologists	404
Age, years (mean ± SD)	54.6 ± 12.6
Age group	
≤ 40 years	81 (20.0%)
> 40 years	323 (80.0%)
Gender	
Male	261 (64.6%)
Female	141 (34.9%)
Years of cardiology practice	
≤ 5 years	45 (11.1%)
6–10 years	52 (12.9%)
11–15 years	50 (12.4%)
16–20 years	67 (16.6%)
> 20 years	190 (47.0%)
Cardiologist in training	
Yes	20 (5%)
No	398 (95%)
Predominant working sector	
Public institution	132 (32.7%)
Private institution	119 (29.5%)
Mixed	153 (37.9%)
Geographical region of cardiology practice	
CABA	92 (22.8%)
Greater Buenos Aires	103 (25.5%)
Province of Buenos Aires	76 (18.8%)

Variable	Result
ANW	43 (10.6%)
ANE	28 (6.9%)
Cuyo Region	25 (6.2%)
Central Region	19 (4.7%)
Patagonia	18 (4.5%)
Working hours per week (mean ± SD)	40.9 ± 17.4

ANW: Argentine North Western Region; ANE: Argentine North Eastern Region

Table 1: Demographic and working characteristics of the surveyed cardiologists. The data are expressed as numbers and percentages or mean ± standard deviation, as appropriate.

Table 2: Perception of professional recognition, economic conditions and future expectations

Variable	Results
Perception of remuneration according to workload	
Agree / totally agree	8 (2.0%)
Neither agree nor disagree	7 (1.7%)
In disagreement / totally in disagreement	384 (95.0%)
Did not repond	5 (1.23%)
Level of income satisfaction	
Satisfied / totally satisfied	49 (12.1%)
Neutral	59 (14.6%)
Dissatisfied / totally dissatisfied	285 (70.5%)
Did not respond	11 (2.7%)
Expectation of future economic development	
It will improve	29 (7.2%)
It will be similar	98 (24.3%)
It will be worse	224 (55.4%)
Undefined	53 (1.1%)
Perception of economic, social and union representation	
Adequate	32 (7.9%)
Inadequate	318 (78.7%)
Does not know	54 (13.4%)

Table 2: Perception of professional recognition, economic conditions and future expectations of surveyed cardiologists. Results are expressed as numbers and percentages.

REFERENCES

1. Ministerio de Salud de la Nación Argentina. Los recursos humanos en salud en Argentina. Buenos Aires: Ministerio de Salud; 2015.
2. Foro de Sociedades Médicas Argentinas. Documento inicial y preocupaciones por la crisis en el sistema de salud. Buenos Aires; 22 Apr 2025
3. Sociedad Argentina de Cardiología. La salud pública en el centro del debate. Rev Argent Cardiol. 2023;91.
4. Encuesta nacional expone fuerte desánimo en profesionales de la salud y crisis de recursos humanos en Argentina. *Río Negro* [Internet]. 2025 Nov 3 [cited 2025 Dec HH]
5. Lewis SJ, Mehta LS, Douglas PS. Gender disparities in cardiology: Implications for career choice among trainees. *Circulation*. 2020;141(8):609–611. doi:10.1161/Circulation.ahA.119.044182
6. Ministerio de Salud de la Nación Argentina. Los Recursos Humanos de Salud en

- Argentina, Año 2015. Observatorio Federal de Recursos Humanos en Salud; 2015.
7. Ballesteros Pérez AM, Saturno Hernández P, Ortega Ruiz P, Minguez Vallejos R, Molina Durán F, Martínez Ros MT, et al. Construcción y validación de una escala de actitudes hacia la atención primaria de salud. *Aten Primaria*. 1996;18:168-75
 8. Borracci RA. El valor del trabajo médico. *Rev Argent Cardiol*. 2018;86(2):85-87.
 9. Borracci RA, Arribalzaga EB. Satisfacción laboral, remuneración y bienestar profesional en médicos argentinos. *Rev Argent Cardiol*. 2016;84(6):521-528
 10. Dyrbye LN, Shanafelt TD. Physician burnout: a potential threat to successful health care reform. *Lancet*. 2016;388(10057):2272-2273.
 11. Burnout y resiliencia en residentes de cardiología y cardiólogos realizando subespecialidades, Sigal A. R., Costabel J.P. et al
 12. Burnout Survey among SAC Cardiologists. Avalos Oddi A., Castillo Costa Y. et al
 13. Alexandrou M, Brilakis ES. *Burnout in cardiology: a narrative review*. *J Interv Cardiol*. 2024
 14. Agrest A. Cualidades deseables en los medicos. *Medicina* 1988;48:201-11
 15. Roiter H, Alves de Lima A, Galli A, Migliore R, Guevara E, Grancelli H, et al. Formación del médico cardiólogo a través del sistema de residencia: una propuesta del Área de Docencia de la SAC. *Rev Argent Cardiol* 2015;83:236-40
 16. Expectations about the Future in a Population of Argentine Cardiologists Adriana I. Salazar. *Rev Argent Cardiol* 2015;83:549-555. <http://dx.doi.org/10.7775/rac.es.v83.i6.7298>
 17. Shanafelt TD, Hasan O, Dyrbye LN, et al. Changes in burnout and satisfaction with work life balance in physicians. *Mayo Clin Proc*. 2015;90(12):1600-1613
 18. Medscape. Burnout y descontento económico en médicos argentinos: resultados de encuesta nacional. *Medscape Argentina*. 2025