

How do Cardiologists Recommend Physical Activity? Survey on Physical Activity Recommendations by Cardiologists. (E-REAFIRMAR)

¿Cómo recomendamos actividad física los médicos cardiólogos?

Encuesta sobre recomendación de actividad física por médicos cardiólogos. (E-REAFIRMAR)

IGNACIO DÁVOLOS^{1,2}, GUSTAVO CASTIELLO^{1,3}, ENRIQUE GONZÁLEZ NAYA^{1,4}, JORGE FRANCHHELLA^{1,5}, BELÉN SOTELO^{1,6}, CLAUDIA BUCAY^{1,7}, DIEGO IGLESIAS^{1,8}.
MEMBERS OF THE EXERCISE CARDIOLOGY COUNCIL WORKGROUP OF THE ARGENTINE SOCIETY OF CARDIOLOGY (SAC)#

ABSTRACT

Background: A large number of studies confirm the benefits of physical activity, but only a few publications describe on how it is prescribed during the medical consultation. The purpose of this study was to determine the degree of knowledge and attitude of cardiologists about existing recommendations on physical activity.

Methods: This was an observational, cross-sectional study performed on 229 cardiologists responding to a virtual survey. The profile, degree of knowledge, planning and satisfaction of each cardiologist were analyzed. Responses were evaluated according to gender, cardiovascular risk factors, and years as a specialist.

Results: Seventy percent of participants met World Health Organization recommendations for physical activity, 98.99% recommended physical activity and 80.74% prescribed it. Only 31.85% had completed postgraduate training that included knowledge on physical activity prescription. Cardiologists with cardiovascular risk factors were mostly men and were less engaged in physical activity than the rest. Those with more years as specialist were more likely to consider sedentary lifestyle as a risk factor, and prescribed more physical activity.

Conclusion: This survey provides knowledge on the prescription profile of cardiologists associated with physical activity. Lack of information seems to be the greatest obstacle to prescription generalization.

Key words: Physical activity – Prescription - Cardiologists

RESUMEN

Introducción: Gran cantidad de estudios confirman los beneficios de la actividad física, pero existen escasas publicaciones sobre cómo se prescribe durante la consulta médica. El objetivo de este trabajo fue conocer el grado de conocimiento y la actitud de los cardiólogos respecto a las recomendaciones existentes sobre actividad física.

Material y métodos: Estudio observacional y transversal (n = 299 cardiólogos), que respondieron una encuesta virtual. Se analizó el perfil del cardiólogo, grado de conocimiento, planificación y satisfacción. Se analizaron las respuestas según género, presencia de factores de riesgo cardiovascular y años de especialista.

Resultados: El 70% de los participantes realiza actividad física según recomendaciones de la Organización Mundial de la Salud. El 98,99% recomienda actividad física y 80,74% la prescribe. Solo el 31,85% ha realizado formación de posgrado que incluyera conocimientos sobre prescripción. Los cardiólogos que presentan factores de riesgo cardiovascular son mayoritariamente varones y realizan menos actividad física que el resto. Los que tienen más años de especialista consideran con mayor frecuencia el sedentarismo como factor de riesgo y prescriben más actividad física.

Conclusión: La encuesta realizada permitió conocer el perfil prescriptivo de los cardiólogos respecto de la actividad física. La falta de información parece ser el mayor obstáculo para la generalización de la prescripción.

Palabras clave: Actividad física - Prescripción – Cardiólogos

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Address for reprints: Ignacio Dávalos. Division of Cardiology, Hospital de Clínicas José de San Martín, Buenos Aires, Argentina.

Email: ignacio.davolos@hotmail.com

¹SAC Exercise Cardiology Council

² Division of Cardiology, Hospital de Clínicas José de San Martín and Sanatorio Juncal

³ Department of Cardiology, Hospital Argerich and Instituto Argentino de Diagnóstico y Tratamiento (IADT)

⁴ Cardiac Rehabilitation at Instituto Argentino del Diagnóstico y Tratamiento (IADT)

⁵ Director of the Postgraduate Specialist Course in Sports Medicine, School of Medicine, UDH Hospital de Clínicas-UBA; International Trustee of the Board of the American College of Sports Medicine.

⁶ Department of Clinical Cardiology and Cardiovascular Prevention at CEMIC; Instituto Cardiovascular Lezica.

⁷ Division of Cardiology, Hospital de Clínicas José de San Martín.

⁸ Department of Cardiology, Hospital Italiano de Buenos Aires

Paula Stuart Presas, Julieta Bustamante, Carolina Pappalettere, Eliana Filosa, Alberto Marani, Marcelo Pais de Almeida, Noelia Rodríguez, Marcela Cabo Fustaret, Cecilia Zeballos, Martín Bruzzese, Roberto Peidro, Graciela Brion, Oscar Mendoza, Gonzalo Díaz Babio, Ivana Paz, Gerardo Sayavedra, Carolina Arriva, Sabrina Sciolini, Agustina Gelormini.

INTRODUCTION

Physical inactivity is the leading cause of death worldwide. (1, 2) Today, a large number of studies confirm the benefits of physical activity (PA) for improving health and preventing diseases in all individuals at all ages. (3-12)

Being aware of how to prescribe it and/or making recommendations at the medical consultation strengthen PA as a mainstay of cardiovascular prevention and constitute a more comprehensive medical practice. No registry describing how cardiologists indicate PA is available in Argentina. The purpose of this study was to describe the degree of knowledge and attitude of cardiologists about existing PA recommendations for the general population.

METHODS

An observational, cross-sectional study was performed including 299 cardiologists residing in Argentina, who voluntarily responded to a structured and anonymous virtual survey on the SAC website, which was timely available on the Exercise Cardiology Council tab and was shared on the SAC social networks.

The cardiologist's profile, degree of awareness, planning, and even satisfaction at the moment of recommending PA in the consultation were described. In addition, relevant variables were analyzed according to gender, cardiovascular risk factors (CRF), and years as a specialist in Cardiology.

Ethical considerations

The protocol was evaluated and approved by the Research Ethics Committee of the Argentine Society of Cardiology.

RESULTS

A total of 299 cardiologists, 195 men (65.22%) and 104 (34.78%) women, with mean age of 47.27 ± 11.92 years participated in the study. Table 1 describes the physician profile.

Sedentary lifestyle is considered a CRF by 93.24% of cardiologists. Seventy percent (n=208) of participants report performing PA and meeting World Health Organization (WHO) recommendations. Physical activity is recommended by 98.99% of cardiologists, while 80.74% also prescribe it. In certain situations, physicians decide not to recommend PA, due to lack of knowledge in 4.08% of respondents, because either they believe PA is not necessary or the patient is already a regular athlete in 34.69%, because it is considered a risk for the patient in 42.52%, due to lack of time in the consultation in 10.20%, or because the patient is referred to a PA professional in 8.50%. Taking into account performance and satisfaction in prescribing PA, Figure 1 shows self-rating of cardiologists.

The main supporting instrument of PA prescription are the Guidelines (WHO, American College of Sports Medicine, Ministry of Health or European Society of Cardiology) in 57.33% of respondents, followed by self-perception in 32%, and experts' opinion in 25.33%. Only 3.67% of cardiologists do not rely on any instrument, or did not know.

Walking or jogging is the most common mode of

Table 1. Cardiologist profile

Years as specialist	N	%
<5	56	19.05
5-10	60	20.41
11-20	79	26.87
21-30	51	17.35
>30	48	16.33
In-office activity		
25%	77	26.01
50%	107	36.15
75%	77	26.01
100%	35	11.82
Number of consultations per month		
<50	50	16.67
50-100	87	28.91
100-200	83	27.55
200-300	39	13.27
>300	40	13.61
Sector		
Private	172	58.11
Public	26	8.78
Both	98	33.11
Region		
Province of Buenos Aires	120	40.82
Autonomous City of Buenos Aires	84	28.57
Cuyo	30	10.20
Pampas	24	8.16
Argentine Northwest (NOA)	20	6.80
Argentine Northeast (NEA)	8	2.72
Patagonia	8	2.72
Cardiovascular risk factors		
Overweight	84	28
Hypertension	61	20.33
Dyslipidemia	59	19.67
Smoking	23	7.67
Diabetes	15	5.00
Coronary heart disease	11	3.67

exercise suggested (Figure 2). Some of the following components are used by 90.63% of respondents: aerobic (88.67%), flexibility (26%), strength (25.67%), and balance (20.33%). Only 25.67% combine aerobic endurance and strength exercises.

Within the aerobic component, 50% prefer interval training, 38.43% choose continuous exercising, 9.33% select any mode, and 2.24% prefer high-intensity interval training. Regarding aerobic training intensity parameters, 48.86% use heart rate, 12.50% apply the Borg scale, 11.74% select another scale, and 26.89% suggest none.

Some kind of parameter for PA planning is used by 92.97% of respondents. Heart rate is selected by 64.33%, 47% choose time, 41.33% mode, and 21% intensity. Only 13% combine all four parameters.

Equipment for PA practice is discouraged by

Fig. 1. Cardiologists' performance/satisfaction when prescribing PA

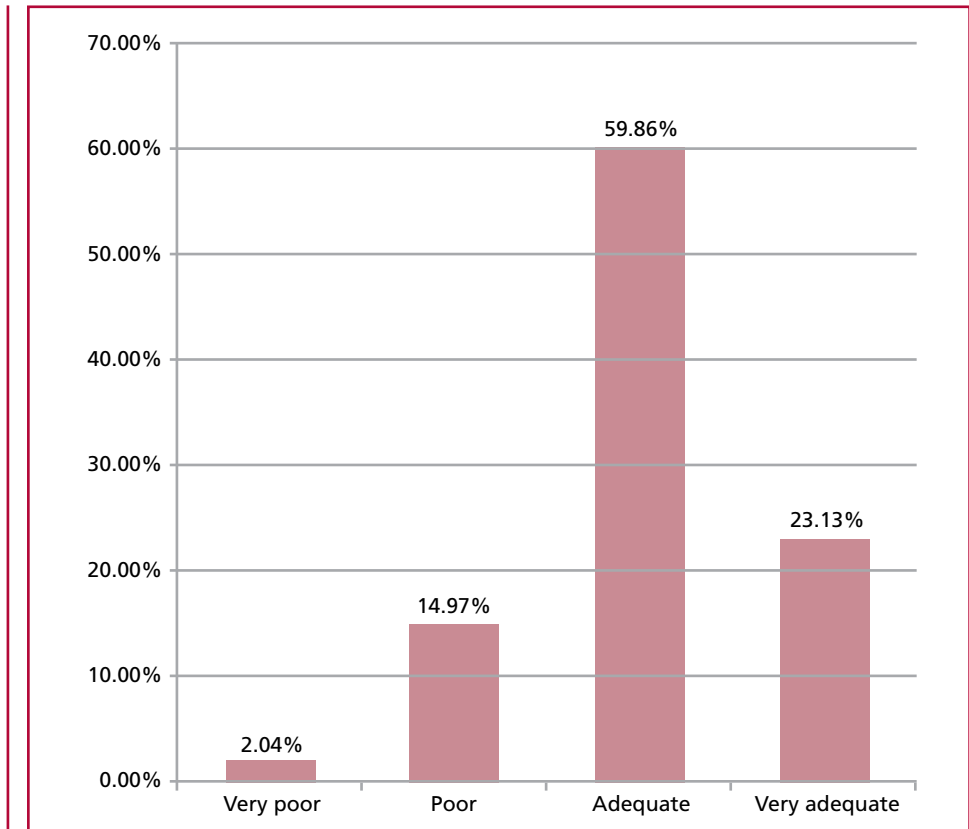
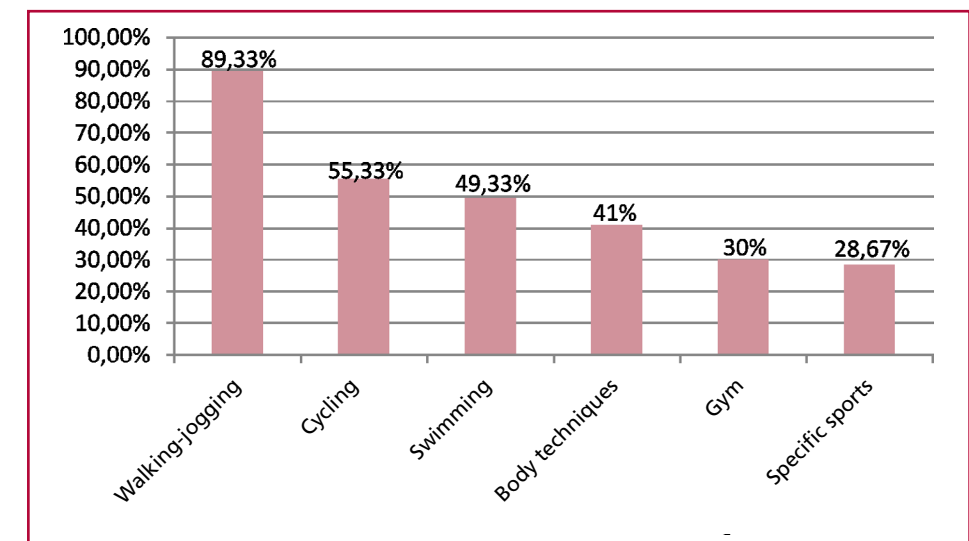


Fig. 2. Types of recommended exercises



51.67% of cardiologists. Smartphone applications such as cell phone watch, GPS watch, or step counter are recommended by approximately 20% of respondents.

Only 31.85% have completed postgraduate education or training that included knowledge on prescribing PA. Medical education regarding PA prescription was received within the framework of congresses, conferences or courses by 65.08% of cardiologists.

When selecting a measure favoring PA prescription, 31% choose more than one option. About 50%

opt for one of the measures provided (brochure delivery to patients, information through a website, or the creation of organizations for specific training) with no prevailing strategy.

Table 2 shows the analysis of cardiologists according to the number of years as specialist.

No statistically significant difference was found between genders when considering sedentary lifestyle a CRF ($p=0.35$), when performing PA following WHO recommendations ($p=0.49$), or when recommending

and prescribing PA ($p=0.24$ and $p=0.82$, respectively). A significant difference was observed in the presence of CRF ($p < 0.001$). A risk factor was reported by 54.19% ($n=162$) of cardiologists surveyed, and among them, 74.07% were men.

When comparing those without CRF and those with any CRF, 93.83% of the latter group consider sedentary lifestyle a CRF; 99.38% recommend PA and 99.38% prescribe it, with no significant difference with the former group. Only 64.81% of respondents perform PA meeting WHO recommendations.

DISCUSSION

The SAC, together with the Argentine Cardiology Foundation, is working to achieve the goals set by the WHO 25 × 25 strategy. It has been decided to address modifiable CRF to reduce premature mortality from chronic noncommunicable diseases. One of the major CRF is sedentary behavior, because absence of PA alters endothelial function and favors other risk factors, such as hypertension, diabetes, lipid disorders, overweight and obesity.

Sedentary behavior is one of the leading CRF due to the volume of the population involved. In the 1990s, the American Heart Association and the American College of Sports Medicine issued the slogan of performing at least 30 minutes of daily PA to combat sedentary lifestyle.

According to the latest national survey on risk factors in Argentina, less than 60% of adolescents perform the PA suggested for their age. Almost half of the adult population has a sedentary lifestyle, and in older adults it rises to 56%. (13) These data confirm the enormous importance of the problem. In this regard, the Exercise Cardiology Council of the SAC is in the final stage of developing a Physical Activity Guideline for Cardiovascular Health.

In our undergraduate training, physicians are trained in health diagnosis, but the curriculum planning has not been adapted yet to know and learn the foundations and basic knowledge of fitness assessment or the systematics for recommending PA.

Guidelines or recommendations aim at improving quality of care, patient survival and prognosis, with the highest level of evidence available. High adher-

ence to these recommendations has been observed; however, in the real world, cardiologists do not show full adherence, and this occurs for different reasons, including the super-specialization of medicine, the large amount of daily information, or simply their lack of knowledge.

In this study, we observed that 30% of cardiologists fail to perform PA meeting WHO recommendations. Nevertheless, a large percentage of them recommend and even prescribe PA with no specific or postgraduate training on PA prescription. In conclusion, only 4% assume their lack of knowledge on the topic.

Nevertheless, 83% of cardiologists feel that their performance and satisfaction are adequate or very adequate when prescribing PA; fortunately, only 10% report lack of time in the medical consultation. This information is very representative and reveals that recommending PA is not time consuming.

It is clear that the contributions of our survey are not incidental; 32% of cardiologists supported intervention on self-perception, and 25%, on experts' opinion. A recent publication stated that the degree of cardiologist adherence to the American Heart Association (AHA) guidelines on cardiovascular disease risk factors was 43.3%. (14)

In line with the above, probably due to lack of knowledge or unnecessary/unsubstantiated concern, most cardiologists suggest aerobic exercise (walking or jogging). In the past decade, the importance of strength exercises and the development of muscle mass have been emphasized; even WHO recommendations include strength exercises for all ages. (15-21)

In the gender-based analysis, no differences in prescriptions were observed. Cardiovascular risk factors were highly predominant in men, and cardiologists with CRF were less engaged in PA than the rest.

In addition, cardiologists with many years as specialists were likely to consider sedentary lifestyle a CRF, and therefore, prescribed more PA than less experienced cardiologists.

Regarding measures to encourage PA prescription, our results were similar to those of a recent French publication. (22)

These data show a huge gap between the lack of knowledge among cardiologists (about 4%) and the

	<10 years (n=116) n (%)	>10 years (n=183) n (%)	p
Considers sedentary lifestyle a CRF	104 (89.66)	172 (95.56)	0.04
Performs PA according to WHO	84 (72.41)	124 (68.89)	0.51
Recommends PA	115 (99.14)	178 (98.89)	0.83
Prescribes PA	84 (72.41)	155 (86.11)	0.003
Basis for prescription			
Guidelines	73 (62.93)	99 (53.51)	0.21
Expert opinion	27 (23.28)	49 (26.49)	0.59
Self-perception	37 (31.90)	59 (31.89)	0.73

Table 2. Analysis based on years as specialist

critical mass trained in PA prescription. Lack of training seems to be the greatest obstacle to the generalization of PA prescription. In view of these results, we believe it is a great opportunity to work on training cardiologists about the recommendation and prescription of PA.

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Conflicts of interest

None declared.

(See authors' conflicts of interest forms on the website/ Supplementary material)

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