

# Expectations about the Future in a Population of Argentine Cardiologists

## *Expectativas acerca del futuro en una población de cardiólogos argentinos*

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### ABSTRACT

**Background:** Studies on the professional status of cardiologists in Argentina demonstrated that worse quality of life was associated with lower incomes and poorer working conditions. Knowledge of cardiologists' present and future perceptions and expectations is necessary for the individual and proper organization of each professional, as well as for the design of public policies.

**Objectives:** The aim of this study was to describe the present and future perceptions about the professional and economic situation of cardiologists in Argentina and analyze individual and common characteristics associated with negative perceptions.

**Methods:** This was an observational, cross-sectional study, based on an electronically delivered survey on the demographics, working characteristics and present, in 10 years and at retirement perceptions of professional situation, defining "Bad" or "Very bad" answers as a negative perception.

**Results:** A total of 236 cardiologists answered the survey; 26% were women and 57.1% were from CABA and the Buenos Aires suburban area. The perceived professional situation was: a) Current: Bad/Very bad 9.7%, Fair 45.1%, Good/Very good 45.1%; b) In 10 years: Bad/Very bad 17.1%, Fair 44.6%, Good/Very good 38.3%; c) At retirement: Bad/Very bad 49.1%, Fair 30.3%, Good/Very good 20.6%. Univariate analysis showed greater negative expectation at retirement in: heart disease ( $p=0.007$ ), coronary risk factors ( $p=0.027$ ), anxiety/depression ( $p=0.016$ ), main breadwinner supporting more than three children/relatives ( $p=0.034$ ) and having suffered any disease ( $p=0.03$ ).

The presence of four factors (or hidden variables) was established in the principal component analysis, probably defined as: vulnerability, over-adaptation, overt disease and insulated autonomy.

**Conclusions:** Although cardiologists consider that the present is promising, the near future and retirement impress like a threatening and negative reality. This could then be the opportunity to assume a deep and critical attitude to change the ways of working in order to promote a safer and better future.

**Key words:** Working Conditions - Socioeconomic Factors - Social Vulnerability - Physicians - Argentina

### RESUMEN

**Introducción:** Estudios sobre la situación profesional de los cardiólogos en la Argentina mostraron peor calidad de vida relacionada con menores ingresos y peores condiciones laborales. Conocer las percepciones y expectativas actuales y alejadas de los cardiólogos resulta una información necesaria para la organización individual y propia de cada profesional, así como para el diseño de políticas públicas.

**Objetivos:** Describir las percepciones de los cardiólogos en la Argentina sobre su situación profesional y económica actual y futura y analizar las características individuales y comunes asociadas con las percepciones negativas.

**Material y métodos:** Estudio observacional, de corte transversal, por medio de una encuesta realizada por vía electrónica sobre características demográficas, laborales y percepciones de situación profesional actual, a 10 años y al retiro, definiendo como percepción negativa las respuestas "Mala" o "Muy mala".

**Resultados:** Contestaron 236 cardiólogos: 26% mujeres, 57,1% de CABA y conurbano. La situación profesional percibida fue: a) Actual: Mala/Muy mala 9,7%, Regular 45,1%, Buena/Muy buena 45,1%; b) A 10 años: Mala/Muy mala 17,1%, Regular 44,6%, Buena/Muy buena 38,3%; c) Al retiro: Mala/Muy mala 49,1%, Regular 30,3%, Buena/Muy buena 20,6%.

El análisis univariado mostró mayor expectativa negativa al retiro en cardiopatía ( $p = 0,007$ ), factores de riesgo coronario ( $p = 0,027$ ), ansiedad/depresión ( $p = 0,016$ ), principal sostén del hogar con más de tres hijos/familiares a cargo ( $p = 0,034$ ) y haber padecido alguna enfermedad ( $p = 0,03$ ).

En el análisis de componente principal se estableció la presencia de cuatro factores (o variables ocultas), que definimos exploratoriamente como mayor vulnerabilidad, sobreadaptación, enfermedad manifiesta y autonomía con aislamiento.

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**Conclusiones:** Aunque los cardiólogos ven el presente favorablemente, el futuro cercano y el retiro impresionan como una realidad amenazadora y negativa. Tal vez sea oportunidad de tener un rol crítico y profundo con actitud de cambio de los modos de trabajar para promover un futuro más seguro y mejor.

**Palabras clave:** Condiciones de trabajo - Factores socioeconómicos - Vulnerabilidad social - Médicos - Argentina

## Abbreviations

<b>CABA</b>	Autonomous City Buenos Aires	<b>SAC</b>	Argentine Society of Cardiology
<b>GBA</b>	Greater Buenos Aires	<b>MVAW</b>	Minimum, Vital and Adjustable Wage

## INTRODUCTION

In the last decade, researches performed by the Bioethics Committee and the Research Area of the Argentine Society of Cardiology (SAC) on the professional situation of cardiologists and their quality of life showed great dissatisfaction and high correlation between income level and quality of life perception. (1, 2)

A recent publication by Salazar and Boissonnet (3) suggests that despite this discontent there are few research projects on the medical situation in public and private health areas.

In 2012, the Health Policy Area of SAC also revealed views on working, union and approaches to “professional issues” matters among cardiologists. The present survey was then designed to update information on cardiologists, their working methods and near and distant future expectations. After triangulation with other information and in a multidisciplinary approach, the data could then be transferred to those who should address the rights of doctors, their welfare and public health. (4-6)

The aim of this study was to describe cardiologists’ perceptions on their current and future professional quality of life in Argentina and to analyze patterns of individual characteristics associated with negative perceptions.

## METHODS

The research was based on a survey to all cardiologists in SAC’s database, electronically delivered through the newsletter (e-mail) and available in SAC’s web page to be self-administered and answered anonymously between September 2013 and May 2014. The survey consisted in 25 multiple-choice questions focused on the following domains; Demographic: age, gender, location; Curricular: graduation year, subspecialties; Working status: hourly workload, jobs, income, contract forms; Household support status (main breadwinner or not); Health: recreational/sports activities; Opinion on professional risks; Perceptions about their own professional situation: present, in the next decade and at retirement.

To compare with other studies, income was defined as multiples of Minimum, Vital and Adjustable Wage (MVAW), which in January 2014 corresponded to \$3,600.

The questions about the perceptions of their own professional situation allowed 5 answer options: Very Good – Good – Fair – Bad – Very Bad, which were dichotomized in association analyses, considering Very Good, Good and Fair

as a “favorable” perception and Bad and Very Bad as an “unfavorable” perception.

## Statistical analysis

This was an observational, cross-sectional study. The statistical analysis was performed in three stages. In the first stage, univariate analysis was done using the chi-square test, considering present and future perceptions as dependent variables and age (dichotomized in >40 years), gender, geographical location (dichotomized as CABA and GBA vs. the rest of the country), hourly workload (dichotomized in >40 hours/week), main breadwinner supporting 3 or more persons, living alone (and hence, main breadwinner of his unipersonal home), incomes (dichotomized in >6 MVAW), being both employed and independent versus working in only one of these modalities, coronary risk factors, heart disease, anxiety and/or depression, or presence of any disease as independent variables. The other surveyed variables were not included in this or later analyses because they were scarcely frequent (e.g. cancer), they were nominal variables with multiple categories of difficult statistical analysis (e.g. subspecialty), or because they were considered by researchers as scarcely related with the objective of this article (e.g. proposed actions).

In a second stage, an exploratory factor analysis was performed (main component analysis) as a way of identifying whether there were unifying “hidden variables” of association between the collected data which could better explain the variability of the sample. (7, 8) This analysis model included the independent variables mentioned in the previous paragraph.

In a third stage, the association between the factors detected in the main component analysis with present and future perceptions was analyzed with Student’s t test as an initial step to confirm the validity of the theoretical constructs that might be generated from this exploratory factor analysis.

The statistical analysis was performed using STATA 11.0 software package.

## Ethical considerations

The protocol was evaluated and approved by the Health Policy Area of SAC. As the survey was only directed to physicians to explore demographic data and perceptions on the professional situation, other assessments were not considered necessary. The answers to the questionnaire were assumed as “consent”. No identifying details were requested from the respondents.

## RESULTS

A total of 236 professionals answered the survey; 60

(25%) were female and 176 (75%) were male. Four percent of physicians were under 30 years, 55% from 31 to 50 years, 31% from 51 to 60 years, 8% from 61 to 70 years and 2% over 71 years.

Tables 1A and B show the main population characteristics.

Regarding their health status, 49 subjects (20.8%) referred anxiety/depression conditions, 9 (3.8%) oncological diseases, 18 (7.6%) cardiovascular diseases, 63 (27.3%) cardiovascular risk factors, and 33 (14.0%) other diseases, whereas 111 subjects (47.0%) did not refer any disease.

**Table 1.** Participant description and working situation

### A. Participant description

		%
Specialty	Cardiologist	77.0
	Clinician with cardiological orientation	17.5
	Cardiology resident	5.5
Main subspecialties	None	21.1
	Sports cardiology	7.6
	Cardiac/vascular echo-Doppler	22.9
	Electrocardiography	1.3
	Electrophysiology	6.4
	Research	3.4
	Hemodynamics	4.2
	Nuclear Medicine	1.7
	Coronary care unit	31.8
Workplace	CABA-Greater Buenos Aires	57.1
	The rest of Buenos Aires province	14.9
	Other provinces of Argentina	26.6
	Outside Argentina	1.3

### B. Working conditions

		%	(n=231)
Weekly working hours	<20	15.6	36
	20 to 40	46.8	108
	40 to 60	29.0	67
	>60	8.7	20
		%	(n=207)
Working modalities	Employed	8.2	17
	Independent	39.6	82
	Both modes: employed and independent)	52.2	108
		%	(n=236)
Household/persons to support status	Not main breadwinner	23.3	55
	Lives alone (self-support)	16.5	39
	MB with up to 2 children/relatives to support	40.7	96
	MB with 3 or more children/relatives to support	19.5	46
		%	(n=197)
Monthly income	<2 MVAW	3.5	7
	2-4 MVAW	3,5%	26
	4-6 MVAW	13.2	49
	6-8 MVAW	24.9	47
	8-10 MVAW	23.9	26
	>10 MVAW	13.221.3	42

MB= Main Breadwinner. MVAW= Minimum, Vital and Adjustable Wage

One hundred and seventy-five cardiologists (74.2%) answered the questions about current and future perceptions of their situation; a not negligible number of respondents did not answer these questions.

Figure 1 shows the types of perception referred by the surveyed physicians concerning their current, in the next decade and at retirement professional situation.

Table 2 details the analysis of the association between the mentioned independent variables and perceptions.

To explore other relationships among variables, an exploratory factor analysis was performed in the last stage of the analysis (“main component analysis”). This type of analysis looks for association patterns among variables and attempts to explain this pattern in terms of a (low) number of underlying variables, known as “factors”. These factors may really exist or constitute explicative theoretical constructs encompassing the associated information from different related variables. This is a common methodology in social sciences that helps to elaborate the behavior of sometimes less evident variables. The usual methodology was followed for this analysis. (7, 8)

In the first place, the main component analysis detected the existence of 4 factors (the conventional criterion of considering a factor as real if its Eigenvalue was >1 was used): Factor 1 concentrated 20.8% of sample variability, factor 2: 16.2%, factor 3: 12.8% and factor 4: 9.7% (total among the four factors: 59.5%) (Table 3).

Then, mathematical rotation of the model was performed, and the associations of each variable with each factor (“load”) were estimated, establishing by convention (common criterion) that a variable is associated to a factor when “load” to that factor is >0.5. Table 4 details the variables loading each factor, from 1 to 4.

We could thus establish the presence of four fac-

tors (or hidden variables).

- Factor 1: it basically loaded to variables associated with disease (presence of any type of disease, especially coronary risk factors, anxiety or depression). A priori, the content of this factor is assumed as self-perception of “Physical or psychological vulnerability”.
- Factor 2: it loaded to male gender, greater hourly workload and higher income variables. This factor was conceived as “Adaptation/over adaptation to demand”.
- Factor 3: in a certain way, it is similar to factor 1, as it presence of another disease variable (heart disease), in addition to older age. Due to the possibility of perceiving heart disease as more severe compared with the other mentioned diseases in the Table (and furthermore, as it is a cardiologist sample) this factor was considered as “Injury perception” or “Presence of greater injury” by the cardiologist.
- Factor 4: it was the one with lowest weight in factor analysis (lowest eigenvalue), which loaded to two op-posite variables: living alone and not being a household breadwinner. It should be expected that this vital situation was common in younger subjects but, as the age variable did not load to this factor, it was interpreted to correspond to another independent personal component, initially termed as “Isolation and autonomy”.

Finally, and to initiate the validity analysis of the generated theoretical constructs, the association of the factors thus established with current and future perceptions was studied (Table 5).

It can be clearly seen that factors detected have an individual conceptual entity (construct validity), as they are associated with perceptions about different moments throughout time.

Thus, at present and at 10 years, professionals



Fig. 1. Current, in the next decade and at retirement perception

**Table 2.** Relationships between population characteristics and perceptions

Characteristic	Current perception					Perception in 10 years					Expectation at retirement				
	Favorable (n=158)		Unfavorable (n=17)		p	Favorable (n=158)		Unfavorable (n=17)		p	Favorable (n=158)		Unfavorable (n=17)		p
	n	%	n	%		n	%	n	%		n	%	n	%	
Male gender	120	75.9	11	64.7	0.31	113	77.9	18	60	0.039	70	78.7	62	74.4	0.31
Age >40	113	77.9	6	42.9	0.004	101	75.4	18	72	0.721	53	67.9	65	81.3	0.055
Works ≥40 hours	102	64.6	12	70.6	0.63	97	66.9	17	56.7	0.284	59	66.3	54	62,8	0.63
MB with ≥3 persons to support	39	24.7	0	0	0.020	36	24.8	3	10	0.077	14	15.7	25	29.1	0.034
Lives alone	17	1.08	7	41.2	0.001	16	11	8	26.7	0.023	13	14.6	12	14	0.9
Heart disease	13	8.2	4	23.5	0.043	12	8,3	5	16.7	0.158	3	3.4	13	15.1	0.007
Coronary risk factors	53	34	3	17.6	0.172	46	31.9	10	34.5	0.790	22	24.7	34	40.5	0.027
Anxiety/depression	38	24.1	5	29.4	0.626	33	22.7	10	33.3	0.221	15	16.9	28	32.6	0.016
Any disease	85	53.8	10	58.8	0.693	75	51.7	20	66.6	0.135	38	42.7	56	65.1	0.003
Employed and independent at the same time	88	55.7	8	47.1	0.497	84	57.9	12	40	0,072	54	61.4	41	47.7	0.07
Income ≥6 MVAW	93	61.2	4	26.7	0.010	90	64.3	7	25.9	0.000	52	62.7	44	53	0.21
CABA or GBA	80	55.9	8	72.7	0.28	72	55.8	16	64	0.449	42	53.8	46	60.5	0.4

MB: Main breadwinner. MVAW: Minimum, Vital and Adjustable Wage. CABA: Autonomous City of Buenos Aires. GBA Greater Buenos Aires

**Table 3.** Factor analysis

Factor	Eigenvalue	Percentage of explained variance by factors	Cumulative percentage variance
Factor 1	2.28827	20.8	20.8
Factor 2	1.78072	16.2	37.0
Factor 3	1.41367	12.9	49.8
Factor 4	1.06229	9.7	59.5

**Table 4.** Load between variables and factors

Variable	Loads to each factor			
	Factor 1	Factor 2	Factor 3	Factor 4
Any disease	<b>0.8571</b>	-0.0045	0.2051	0.0238
Anxiety/depression	<b>0.7910</b>	0.0002	-0.2461	0.0995
CV risk factors	<b>0.7713</b>	0.0848	0.2040	-0.2074
Male gender	0.1261	<b>0.7563</b>	-0.0256	-0.0729
Income	-0.0687	<b>0.7741</b>	0.1881	-0.1902
Hourly workload	0.0326	<b>0.5632</b>	-0.4583	0.4073
Age	0.1061	0.1432	<b>0.7733</b>	-0.0094
Heart disease	0.3022	-0.0249	<b>0.5462</b>	0.1499
Lives alone	-0.0161	-0.0538	0.0455	<b>0.8281</b>
MHB with ≥3 person to support	0.0641	0.3239	0.0327	<b>-0.5712</b>

Variables loading >0.5 to a certain factor are shown in bold. CV: Cardiovascular. MB: Main breadwinner.

with higher score in the “Isolation” factor have a poorer perception, with an inverse relationship for the “Adaptation/overadaptation” factor, where those with higher scores have a more favorable perception. At retirement, the perception is more negative in the pro-

fessionals whose answers are associated to the “Perceived vulnerability” or the “Heart disease” factor.

## DISCUSSION

Our study demonstrated the existence of a significant

**Table 5.** Factors: association with unfavorable expectation at retirement. Statistical scores for each factor, according to expectation

Factor	Current perception			Perception in the next decade			Expectation at retirement		
	Unfavorable	Favorable	p	Unfavorable	Favorable	p	Unfavorable	Favorable	p
1	0.45±0.10	0.48±0.04	0.82	0.57±0.08	0.45±0.04	0.18	0.58±0.05	0.37±0.05	0.002
2	2.18±0.15	2.53±0.05	0.047	2.13±0.13	2.56±0.05	0.002	2.42±0.08	2.56±0.06	0.19
3	1.44±0.16	1.67±0.05	0.12	1.62±0.11	1.65±0.05	0.76	1.76±0.06	1.51±0.54	0.004
4	0.71±0.06	0.43±0.02	0.000	0.58±0.05	0.43±0.02	0.01	0.42±0.03	0.49±0.03	0.12

Unfavorable expectation: "Bad" or "Very bad" answer to the specific question.

Favorable expectation: "Very good", "Good" or "Fair" answer to the same question.

disparity in current and future reality perceptions in a sample of Argentine doctors, (9) associated with different demographic, working, health and way of life variables, a significant part of which were detected by this questionnaire. These variables were grouped into four factors, which a priori are called "Perceived vulnerability", "Adaptation", "Heart Disease" and "Isolation" based on the variables that statistically load onto these factors. This analysis allows suggesting multiple psychosocial and socioeconomic implications on doctors' issues in Argentina, opening a possible path for future research. (10-13)

A SAC survey on physician welfare performed in 2007 (1) showed data on cardiologists' situation indicating the working and personal aspects that had greater correlation with better quality of life perception. (2) Another survey tried to explore the opinion on the role of SAC to treat the issues with favorable responses towards greater membership participation. It was considered essential to continue in this path, so this new survey was organized with the main enquiry focusing on the perceptions of cardiologists concerning their current, in the next decade and at retirement situation and in the associated variables.

Although the number of responses does not represent a large sample size and cannot assume population representativeness, we propose it as an initial approach to the problem. (14, 15) It is worth mentioning the difficulties of conducting such a research at present, with low interest in participating in this type of voluntary surveys, in the context of professional discontent and skepticism on the subject.

Regarding incomes, although at first glance the average and prevailing values are several times higher than the MVAW, the high workload and contract styles should be considered. A large percentage of professionals are independent and have no benefits such as holidays, bonus and sick leaves. The reported values do not consider structural or tax expenses related to the profession such as property rent/purchase, secretary, equipment (others depending on the work style)

Furthermore, although working conditions are clear determinants of perceptions, the workload does not define sense of future. The single working mode (independent or employed) shows correlation with

poorer perception of the future. To work exclusively in an independent way shows poorer perception of the future, whereas the mixed type (both independent and employed) would be better. In contrast, the situation of main household breadwinner with more than 3 persons to support is associated with poorer perception of near and distant future.

Differences are observed when considering heart disease and anxiety/depression: in this case the proportion of cardiologists with negative perception about their future is greater.

Factor analysis, a usual methodology in Social Sciences, was used to seek obvious or hidden relationships among variables. These "factors" express occult variables in the sense that they were not explicitly sought when data collection was made; they could be more powerful than the variables available when explaining what is happening and also because they are deeper elements (actually, the core of an observed phenomenon). These factors are detected by analyzing variable grouping.

We identified four factors: Factor 1 is the grouping of any illness, anxiety or depression/coronary risk factors. Factor 2 is the grouping of male gender, longer working hours ( $\geq 40$  hours per week) and higher incomes. Factor 3 is the grouping of age and heart disease. Factor 4 is the grouping of living alone, being economically independent and without persons to support.

Then, we analyzed the associations of these factors with present and future perceptions and we could see that they associate differently according to the factor. Thus, factors 1 and 3 are associated with poor/very poor perception at retirement, while factors 2 and 4 are associated with poor/very poor current and in next decade perception (an inverse relationship for factor 2).

This mode of analyzing data allows inferring with greater methodological strength that there would be an association between the variables measured and perceptions.

#### Limitations

Limitations are varied but do not undermine the conclusions. First, from the Social Sciences point of view it is acknowledged that the methodology of the stud-

ies whose data collection is done through the Web or email makes them difficult to extrapolate to the universe under study since, on the one hand, subjects who frequently use the Internet may not be similar to the general population and, on the other hand, it is not possible to create a reliable sampling frame over which to calculate non-response rates. The European Society for Opinion and Marketing Research (ESOMAR) establishes that one of the principles to consider a subject as potentially eligible for an email-based study (and thus part of the possible sampling universe) is for the individual to have a "reasonable expectation" that he can be invited to participate, (16) a situation that cannot be established precisely in the vast majority of cases. As such, the general opinion is that this type of study cannot under any circumstances assume population representativeness; therefore no effort was made in our study to estimate non-response rates. (17)

Another significant limitation is the one familiar and usual of cross-sectional studies, not allowing cause-effect inferences, given the absence of the temporality premise.

Finally, the questionnaire used was developed ad hoc for this study, and its psychometric characteristics may have been imperfect. However, the strong association between the identified factors and professional perspectives provide a first level of questionnaire validation and in addition contribute to the knowledge of the issues which were the objective of the study.

## CONCLUSIONS

This survey allows confirming and extending previous data in most of the domains. Although cardiologists in our sample had mostly favorable perceptions of the present, their perceptions of the future and at retirement were mostly unfavorable. There was some association between variables constituting "patterns" where the profession, subjectivity, modes of individual practice, and personal and family situations show different styles or behaviors that deserve to be studied. These patterns exhibit different associations with current perceptions and future expectations, and their knowledge could help to establish prevention behaviors.

From their own responses it is possible to hypothesize about the cardiologists' convenience to have another role and a critical reflection on their working habits and labor identity. The analysis of future negotiations on this subject would be mandatory to promote the construction of a safer and better professional future and allow this improvement to be reflected on patient care.

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## Conflicts of interest

None declared

(See authors' conflict of interest forms in the web/ Supplementary Material).

## REFERENCES

1. Calderón JG, Borracci RA, Angel A, Sökn F, Agüero R, Manrique JL, et al. Income Level of Cardiologists in Argentina and their Professional Quality of Life: Quality and Interpretation of the Results. *Rev Argent Cardiol* 2008;76:359-67.
2. Borracci RA, Calderón JG, Sökn F, Angel A, Lerman J, Darú V et al. Relationship between Income Level of Cardiologists in Argentina and their Professional Quality of Life. *Rev Argent Cardiol* 2008;76:352-8.
3. Salazar AI, Boissonnet C, Galli M, Cáceres Monié C, Álvarez E, Boscaro M et al. "Better Work, Working Better." Are Professional-Related Problems Discussed at the Argentine Congress of Cardiology? Are Physicians Concerned with this Problem? *Rev Argent Cardiol* 2012;80:47-52.
4. Manrique JL. Relación entre la calidad de vida del cirujano y su actuación profesional. *Rev Argent Cirug* 2006;91(Supl):77-153.
5. Varini SD. La actual realidad social y económica de los médicos exige otra mirada. *Rev Argent Cardiol* 2006;74:255-6.
6. Doval HC. Malestar en la medicina. Insatisfacción y descontento en los médicos. *Rev Argent Cardiol* 2007;75:336-9.
7. Norman G, Streiner D. *Biostatistics: The Bare Essentials* Editorial: Principal components and factor analysis. Ed People's Medical Publishing House; 2014. p. 194-209.
8. Hernández Sampieri R, Fernández- Collado C, Baptista LP. *Metodología de la Investigación*. 4.ª ed. Ed McGraw Hill / Interamericana Editores SA de CV; 2014. p. 208-14.
9. Calderón JG, Borracci RA, Sökn F, Angel A, Darú V, Lerman J, et al. Survey on Professional Quality of Life of Argentine Cardiologists. *Rev Argent Cardiol* 2014;82:389-95. <http://doi.org/87f>
10. Tajer CD. An Insight of the Argentine Cardiology from a Bicentennial Perspective. Second Part. *Rev Argent Cardiol* 2010;78:98-102.
11. Borracci RA. Physicians' Behavior, the Systemic Archetypes and the Logic of Extinctions. *Rev Argent Cardiol* 2007;75:387-9.
12. Waldman SV, López Díez JC, Cohen Arazí H, Linetzky B, Guinjoan S, Grancelli H. Burnout, perceived stress, and depression among Cardiology Residents in Argentina. *Acad Psychiatry* 2009;33:296-301. <http://doi.org/d5rkzj>
13. Iglesias R. To Whom Should Research Be Relevant? Which Questions Should It Answer? *Rev Argent Cardiol* 2009;77:437-8.
14. Ospina EG, Reveiz Herault L, Cardona AF. Uso de bases de datos bibliográficas por investigadores biomédicos latinoamericanos hispanoparlantes: estudio transversal. *Rev Panam Salud Pública* 2005;17:230-6. <http://doi.org/dk3h9z>
15. Balter O, Balter KA. Demands on web survey tools for epidemiological research. *Eur J Epidemiol* 2005;20:137-9. <http://doi.org/frwtkv>
16. ESOMAR Guideline for Online Research; Last updated in August 2015 [Downloaded 4 August 2015; Available from Internet: <https://www.esomar.org/knowledge-and-standards/codes-and-guidelines/guideline-for-online-research.php>
17. Nonnecke AD, Preece B. Electronic survey methodology: A case study in reaching hard to involve Internet Users. *International Journal of Human-Computer Interaction* 2003;16:185-210. <http://doi.org/dxbrh5>