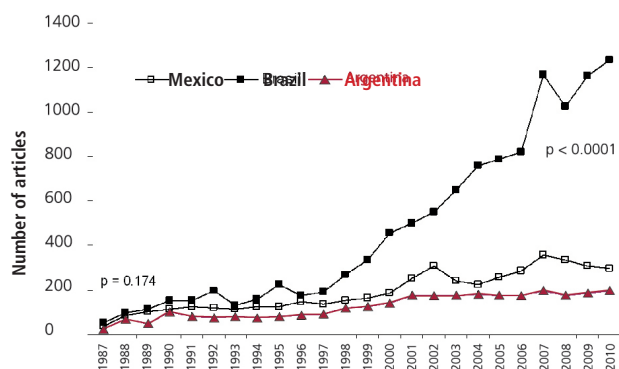


The expected SAC Fellowship

To the Director

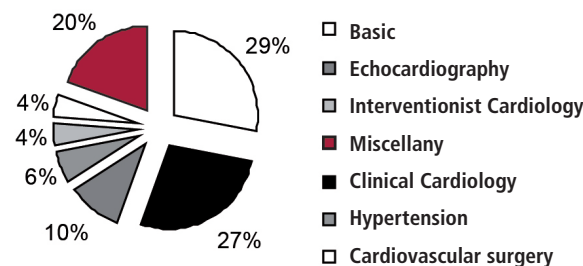
Two reasons prompted me to reflect on the Letter from the President of the SAC which appeared in number 3 of this Journal. (1) In my view, the recent announcement of SAC Fellowship aimed at young cardiologists transcends the purely economic to the intimately emotional. In 1989 it was competed for the last time Young Investigator Award of the SAC. At that opportunity I had the honor of being a finalist in this award, and although unfortunately I did not win it, I felt as a young man they had given me a great opportunity, which all that set of men and honors that made the austere structure of that great scientific society, had set their sights on a young hope of their own fold. Anyone who has gone through a similar predicament with my words will revive the heady excitement of knowing participant in a small scientific feat. In this sense, the called to the SAC Fellowship will surely renew these feelings in the young generations of cardiologists researchers.

Dr. Barrero rightly states that the cardiological research in our country has lost ground in recent years, a statement that I want to fill out with some data. The following chart shows the number of cardiological articles published in Pubmed / Medline through the years by the three countries with more publications in Latin America:



As Dr Barrero suspected, unfortunately Argentina has distanced from Brazil from the second half of the nineties and its performance in terms of number of cardiological publications did not improve substantially in the first decade of the new century. Contrast this trend with the published one for all Argentine biomedical articles in number 4 of this Journal. (2)

Let us see the chart below, by way of example, the thematic areas of Argentine cardiological articles published in indexed journals between 2004 and 2006:



As it is shown, the articles in basic science, clinical cardiology and echocardiography covered two thirds of the publications. Meanwhile, in the same period, the journals with most Argentine publications in cardiology were the followings:

Rev Esp Cardiol	6.3%
Eur J Echocardiogr	5.6%
Am J Physiol Heart Circ Physiol	4.9%
Int J Cardiol	3.5%
Am Heart J	3.5%
Cardiovasc Res	2.8%
Medicina (B Aires)	2.8%
J Invasive Cardiol	2.1%
Int J Cardiovasc Imaging	2.1%
Mol Cell Biochem	2.1%
J Hypertens	2.1%
Other Journals	62.2%

Of a total of 81 journals in which articles were published, we see an important dispersion in the distribution of these.

As a final reflection, we know that it is in us to convey the excitement of research and recruit new young people to science. In this line, so this SAC Fellowship for young cardiologists as those certainly continue to generate the embryos of our future scientific talent.

Dr. Raúl A. Borracci^{MTSAC}

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Multiple-choice Tests for Certification – Recertification

To the Director

The work of Galli et al (1) is a very good opportunity to analyze and assess our evaluation practices. The multiple-choice test is a widely used evaluation tool in

both the undergraduate and in postgraduate school, probably one of the most widespread. Contrary to its use so widespread, it is not always taken into account its appropriate design, basically, as in all evaluation tool, concerning the validity and reliability, relevant features of any evaluation.

Galofré's index (2) was designed to analyze the quality of each of the questions in a multiple choice test. This work shows with interesting data that it has to improve on the design of the questions in these tests in the certification and recertification in Sociedad Argentina de Cardiología. However, even developing multiple-choice tests of better quality, the question is, in this case, if they are valid for the objective what they pursue, to what they want to assess. As Norman and Cunnington indicate, (3) in the certification is necessary to ensure to society that the professional has shown the minimum requests of knowledge, skills, behaviours and attitudes (ability/competition) for the specialty, recertification, however, begins with the assumption that the professional because of being certificated he has minimum standards. What attempts to resolve the recertification is: Has the candidate maintained the level of competition?

Then, the question is: A multiple choice test is the best tool to assess the maintenance of these skills when (as in the case that is presented) the provided evidences on such maintenance (antecedents of curriculum vitae) are not enough? As Linn and Gronlund describe, (4) the multiple-choice test may be used to measure or analyze what is known, what is understandable and even how to approach a specific health situation, but not what the professional, who performs the test, really do in every situation. There is not good tool to measure the ability to organize and present ideas or to assess reasoning in solving problems.

In summary, Galofré's index helps to analyze the construction of each test question, but we should not ignore its validity as a whole to assess what we want to assess.

Therefore, I think very good the proposal to organize a commission to design the tests, but I would offer an extra task: to analyze what other evaluation strategies I would use in complement with the multiple-choice test to obtain valid and reliable information about the skills of the evaluated professional.

Dr. Alejandro Cragno

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Author's response

We appreciate the comments of Dr. Alejandro Cragno about our publication 'Quality evaluation of multiple choice questions used in examinations of Certification and Recertification in Cardiology in 2009', as well as the interest that he manifests on the subject.

The objective of the work in question was to implement an evaluation multiple-choice questions (MCQ, according to its acronym in English), Galofré's index, to questions used in examinations administered by the SAC during 2009, for Certification and Recertification of specialists in Cardiology. The obtained information will be used to start building an 'item bank' to archive the good questions for future evaluations. 'In the context of educational evaluation, an item bank is a set of questions regarding a specific skill or knowledge domain, stored and classified according to their content and metrical properties.' (1)

There are numerous publications about the limitations of multiple choice questions to assess professional performance, as they also are those that describe the benefits to assess the first two levels of the Miller's pyramid. (2) It should be recalled that within the cognitive domain, they may be assessed higher taxonomic levels if the questions are well constructed. (3)

Innovative formats to assess clinical reasoning as scripts (4) have begun to develop specifically with contents for the specialty, since a group of cardiologists has trained in this type of instrument. In practice, the construction of scripts is very expensive in terms of time and dedication, as it demands the collaboration of some 10 experts to construct the key of answers in each of the exercises.

It was not our aim to establish differences with other modes of evaluation of professional skills and / or clinical skills. Portfolios, (5) mini-cex (6) and OSCE (7, 8) are particularly interesting but difficult to build and / or to implement in our context due to lack of material resources and limited availability of human resources. Portfolios without supervision and appropriate feedback, mini-cex with insufficient number of observations and OSCE with small number of stations produce unreliable results. These instruments are used in several countries (USA, Canada, Spain, Israel), in which is charged a significant fee to professional who present to be assessed, in our environment have not been used yet, for certification and / or recertification of specialists. Some Faculties of Medicine have begun using an OSCE as a final test of the career.

Sociedad Argentina de Cardiología has a group of professionals interested in this situation and, slowly but continuously, are improving the evaluation tools

that they use at different levels: specialist training and periodic recertification.

Clearly, the complexity of the medical evaluation, as well as the potential consequences of errors in it, forcing to face the challenge with the interdisciplinary participation of all stakeholders. Doctors and educators toward a common aim: Best Doctors for Better Medicine.

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Evaluation of the level of knowledge in basic areas in a postgraduate of Cardiology

To the Director

Any initiative that is aimed at the improvement of quality of education should be appreciated and encouraged. That is why the article 'Evaluation of the level of knowledge in basic areas in a postgraduate of Cardiology' by Daniel P. In Mollein et. al deserves all the attention in this regard. (1) The authors identify, based on comments of expert teachers in commonly called 'basic Sciences', that students of the career of Specialists of Cardiology may have deficits in their knowledges in these disciplines. To study the problem, the authors assess, through a screening multiple-choice test, to the students in the two levels of the course. From the results, they conclude that such knowledge is insufficient.

From this, there are some thoughts that I hope to

contribute to the findings of the study:

1. The knowledge of an expert or specialist is organized into networks of knowledge known as illness scripts. (2) The formation of such scripts involves a long supervised practice with effective feedback. The role of so-called 'basic knowledges' in the performance of an expert seems to be minimal. (2) How did the authors define which 'basic' knowledges are necessary (content validity) for students to become competent as experts or specialists? How did he assert that this knowledge was relevant in developing competences as an expert? How did he assert that 50 items represent 'significantly' the contents of the 'basic Sciences'?
2. Studies conducted over the past 30 or 40 years in training complex competences or abilities show that the expert should develop the task, which should be trained in increasing levels of complexity through complex, complete and meaningful educational scenarios, rather than build them 'discipline' on 'discipline' in decontextualized environments. (3) One risk of this type of education is that knowledge may be transformed into 'inert', that is to say, it is not available at the time that is necessary to apply. The screening multiple choice test is not an adequate method to assess these competences, since further what it evaluates is 'inert' knowledge, which is not used by the expert or specialist in performance. What is the relevance in building the competences of basic knowledge is insufficient, according to the results of this study?
3. The study provides no evidence for the reliability or the measurement error of the test applied to this population of students. This threatens the internal validity of research.
4. It is laudable and deserves all the support, the final goal of improving the training of young specialists, but the changes should be more oriented to implement teaching strategies that involve a more meaningful and integrated learning, with appropriate supervision in practice and return of high quality. (4)

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Author's response

We appreciate the comments of Dr. Eduardo Durante about our work on 'Evaluation of the level of knowledge in basic areas in a postgraduate of Cardiology', as well as the interest that he manifests on the subject. We accept the methodological observations and clarify that the explored contents in the questionnaire were agreed by a group of experts.

Biennial Course of Cardiology is one of the components of postgraduate course that is offered by UBA; (1) Career of Specialist in Cardiology is based on Residency and is complemented by 'theoretical classes' given in the Scientific Society. In this context, the Course that is offered in the SAC is developed according to traditional instructional design. Undoubtedly, the acquisition of professional competences is achieved in *stages of increasing complexity*, as correspond to the Residency program. (2)

The Course combines expositive classes and case reports in charge of invited specialists and bibliographic atheneums in charge of residents, these activities could be classified as 'supportive information' that students may find in texts, lectures, videotapes and multimedia resources, such as are pointed out by Janssen-Noordman et. al. (3)

Concept formation is a central subject of researches and learning theories. In the context of computational theories of learning, the semantic approach (theory of schemes-frames- scripts-stereotypes) has addressed not only how information is represented, but also how it is acquired.

David Ausubel (1918-2008), physician and psychologist, developed the concept of *meaningful learning* highlighting that the new information is integrated into the cognitive structure of the subject modifying it, he indicates the importance of prior knowledge as conditioning of new learning. In the same line with the processes of assimilation and accommodation described by Jean Piaget (1896-1980). (4-6)

The questionnaire used as **Evaluation of the level of knowledge of residents in basic areas of cardiology** only had as purpose to explore those previous knowledges that facilitated the new learnings, at no time it was thought to be an instrument to assess professional competences. Results of the published study have served as input to the exchange with Chiefs of Service of Cardiology who are responsible for residency programs and to introduce modifications in the organization of the Biennial Course.

Finally, we want to highlight that the SAC is actively involved in promoting that *the changes should be more oriented to implement teaching strategies that involve more meaningful and integrated learning, with appropriate supervision in practice and high-quality return*, as is proposed by Dr. Durante, since he is involved, as an assessed entity at the National Accreditation System of Residencies of Health Team of

the National Ministry of Health (7) and professionals who are involved in this effort understand that the evaluation is aimed at improving quality.

**Dra. Daniela De Molleín, Lic. Amanda Galli,
Dr. Héctor Roiter**

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Adverse experiences in the teacher-student relationship

To the Director

Communication between teachers and students is complex, among other reasons because the difference in role is what affects the symmetry of the functions of communication. Also, you can not lose sight the aspect of the role model that teachers have in training health professionals. (1)

Good part of the bibliography is concerned to problems of this relationship such as harassment and abuse, a convenient definition is to use the term 'adverse experience' and define it as the treatment unnecessarily harmful, injurious or offensive inflicted from one person to another. (2)

They are extensive the descriptions in the literature that approaches this set of problems. Most of these studies, based on surveys, show that more than half of students receive some degree of abuse throughout their careers. Women and ethnical minorities are particularly vulnerable. The clinical rotations are the most common area where they occur.

The impact on students may be serious and can affect, individually, the development of students' attitudes, their learning of certain disciplines and career development in general. Students who are the focus of adverse experiences, are more prone to depression, anxiety, substance and alcohol abuse as well as to develop a lack of confidence in their abilities. (3)

In addition to individual consequences, the educational atmosphere may be affected and some instruments aware of the attitudes of abuse from teachers to students and patients in their

assessment. (4)

Rancich's work et. al (5) allows us to reflect on these events in our country and, along with his previous publications, agree that the frequencies are similar to those observed elsewhere in the world. It is disturbing the high weigh that the experiences appear in a position to test. This is probably conditioned by the persistence of unstructured orals tests that give wide powers to the teacher and especially a lot of uncertainty in students.

It could easily be reduced with the introduction of tests that limit the possibility of teachers to define arbitrarily the results.

It calls attention the null reference to issues of gender and sexual harassment. Anonymity should provide sufficient protection so they can be referenced by students. Perhaps at this point one of the difficulties may come from interindividual differences in the assessment of behaviours considered abusive, as well as the widespread acceptance of treatment that in other contexts would be considered inappropriate.

They are very interesting the qualitative clipping of own texts for students, which reflect the urgent need to intervene in the search for solutions to these problems.

It is the authorities' responsibility to ensure the educational atmosphere and they should plan formal evaluations to enable them to identify situations as discussed in Rancich's research et. al as the first step in approaching the problem, followed by measures that help to prevent and remedy these adverse experiences in educational programs.

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Author's response

We appreciate the letter from Dr. Marcelo Garcia Dieguez and his interest in our work 'Morally wrong incidents in the teacher-student relationship in medical education'.

Regarding his comment that would have been adequate to use the term 'adverse experience' and define it as the 'unnecessarily harmful, injurious or offensive treatment inflicted from one person to another', (1) we share the concept and its characterization. However, we prefer using the term 'morally wrong incident', since in our work was intended that students identified with free acts of their teachers who were against what they consider the moral order in medical education, that is to say, a fact that does not follow the rules belonging to the group to which it corresponds. (2) Finally, we thank again the letter from Dr. Dieguez and his suggestions.

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