

## Original Article

**Euromediterranean Biomedical Journal**  
*for young doctors*  
(formerly: Capsula Eburnea)

### PERCEIVED NEED FOR AN INTERNATIONAL ELECTIVE EXPERIENCE AMONG ITALIAN MEDICAL RESIDENTS

Claudio Costantino<sup>1</sup>, Guido Maringhini<sup>1</sup>, Valentina Albegiani<sup>2</sup>, Caterina Monte<sup>2</sup>,  
Nunzio Lo Cascio<sup>3</sup>, Walter Mazzucco<sup>1</sup>

#### SUMMARY

In the contemporary society an International Health Elective (IHE) represents a strategic tool in order to implement future medical doctor's education. In Italy, in the last decade, an increasing interest of trainees and residents to IHE and opportunities was documented and supported by the reorganization of the Italian residency programs, provided by the Ministry for Education, University and Research (MIUR). Aim of the present study was to collect data on perceived need of medical residents for an IHE.

A structured questionnaire was developed and administered to medical residents of Palermo's University who underwent their annual visit to the Occupational Health Physician Ambulatory (OHPA) of Palermo's University Hospital, in the period between March and October 2011.

Medical residents more prone to undergo an IHE were, younger than 29 years old ( $p < 0.01$ ), attending the new educational system ( $p = 0.02$ ) and surgical residents ( $p = 0.0001$ ). A negative opinion about the formative quality performances of the residency program was significantly associated with surgical residencies ( $p = 0.002$ ). Future Italian surgeons are more prone to undergo an IHE and this statement is probably related to the not satisfying residency program. Residents attending the old educational system consider the IHE as a way to implement their professional perspectives possibly for their more realistic professional perspective facing an approaching future full of work uncertainties. Considering the future competition between medical professionals working in different EU contexts, the Italian Government should implement future medical education policy in order to provide for a Healthcare "without Border" in the EU.

#### Introduction

In the contemporary society a theoretical training in global health [1, 2, 3] and an International Health Elective (IHE) [4, 5, 6] both represent strategic tools in order to implement future medical doctor's education.

The Schengen Agreement and the following European Community Directives established a "Europe without Border" idea for European Union (EU) citizens [7]. Further recent European and Italian Directives have regulated this revolutionary concept both for medical doctors and patients [8, 9].

Several articles have suggested that junior medical doctors feel a strong desire for an international experience and that they partially select their residency program evaluating previously the possibility to attend an international health elective during the training

#### Address of the authors

<sup>1</sup> Department of Science for Health Promotions "Giuseppe D'Alessandro" - Hygiene Section - University of Palermo

<sup>2</sup> Occupational Medicine residency program, University of Palermo

<sup>3</sup> Staff Unit of Occupational Medicine, Azienda Ospedaliera Universitaria Policlinico (AOUP) "Paolo Giaccone"

**Send correspondence to:** Guido Maringhini, [guidomaringhini@gmail.com](mailto:guidomaringhini@gmail.com)

**Received:** January 12th, 2013 — **Revised:** January 31th, 2013 — **Accepted:** February 4th, 2013

period [10, 11, 12]. In 2003, at least 20 percent of the students who graduated from U.S. medical schools participated in overseas activities related to international health during medical school [13].

Although the number of exchanges programs is increasing, there are not detailed data about junior physicians experiences abroad and, above all, there is a lack of objective evaluations of IHEs contribution to their professional growth. Only few studies have assessed the immediate educational and personal benefits of IHEs for residents [13].

In Italy, in the last decade, an increasing interest of trainees and residents to international medical experiences and opportunities was documented, with a demand not being consequentially supported: universities and residency programs rarely provide for anything more than moral support and elective credits. In 2005 a Decree of Ministry for Education, University and Research (MIUR) reorganized residency programs and instituted a National Observatory for the Education and Training of Medical Residents with the aim of monitoring and evaluating standards and performances of the post graduate specialization schools. The Observatory has implemented an anonymous questionnaire, that has been recently administered by a web interactive platform to every medical residents to

evaluate the degree of satisfaction about the residency programs, including the possibility to have an international experience abroad [14].

The Azienda Ospedaliera Universitaria Policlinico (AOUP) "Paolo Giaccone" of Palermo is a teaching hospital composing together with a network of units belonging to other metropolitan hospitals the Palermo Medical Faculty. The Faculty is the seat of the Medical School and as well of the specialization medical schools of Palermo University.

Aim of the present study was to collect data on a sample of the population of the Palermo University medical residents in order to implement the results of the survey with those already gathered by MIUR, with particular regard to perceived need of medical residents for an International Elective experience.

#### Material and Methods

Providing for the education and training of 918 medical residents (academic year 2011/2012), 360 males (40%) and 558 females (60.8%), attending 33 different typologies of specialization medical schools, Palermo Medical Faculty is among

|   | n=414<br>n (%) |
|---|----------------|
| <b>Gender</b>                               |                |
| - Male                                      | 178 (43.0)     |
| - Female                                    | 236 (57.0)     |
| <b>Residency Area, n (%)</b>                |                |
| - Clinical                                  | 120 (29.0)     |
| - Surgical                                  | 113 (27.3)     |
| - Others (Services)                         | 181 (43.7)     |
| <b>Was Residency the first choice? n(%)</b> |                |
| - Yes                                       | 350 (84.5)     |
| - No  | 64 (15.5)      |
| <b>Age Class</b>                            |                |
| - ≤ 29 years-old                            | 226 (54.6)     |
| - ≥ 30 years-old                            | 188 (45.4)     |
| <b>Educational System</b>                   |                |
| - New system<br>(1st, 2nd e 3rd year)       | 265 (64.0)     |
| - Old system<br>(4th, 5th e 6th year)       | 149 (36.0)     |

**Table 1:** Sociodemographic and educational characteristics of the sample (n=414).

|  | n=414<br>n (%) |
|--|----------------|
| <b>Is it possible to do a medical traineeship in a different Hospital?</b> |                |
| - Yes, in Italy  | 70 (16.9)      |
| - Yes, abroad  | 6 (1.4)        |
| - Yes, in Italy and abroad   | 287 (69.3)     |
| - No   | 51 (12.3)      |
| <b>Willingness to transfer in a foreign country</b>                        |                |
| - Yes  | 264 (63.8)     |
| - No   | 150 (36.2)     |
| <b>If yes, what is the main reason? (n=264)</b>                            |                |
| - job possibilities  | 31 (11.4)      |
| - training   | 48 (18.3)      |
| - professional improvement   | 185 (70.3)     |
| <b>If this mobility is expected, is then actually implemented? (n=363)</b> |                |
| - Yes  | 279 (76.9)     |
| - No   | 84 (23.1)      |
| <b>Are you satisfied with your residency program?</b>                      |                |
| - Yes  | 207 (50.0)     |
| - No   | 207 (50.0)     |

**Table 2:** Residency needs and perspectives of the study sample (n=414).

the top 10 in terms of size and number of postgraduate medical learners.

Specialization medical schools, according to current regulation [15], are formally categorized in 3 different areas: clinical, surgical and “services”. The area of “services” is further divided in two sub-areas, each one including respectively the diagnostic and therapeutic address (anesthesiology, radio-diagnostic, etc) and the public health and organizational ones (Hygiene and Preventive Medicine, Legal Medicine, etc). Of the 918 medical residents, 389 attended a medical specialization school, 236 a surgical one and 293 a school belonging to the services’ area.

After revision of the current literature on the perceived need for an IHE, a structured questionnaire was developed and administered to medical residents of Palermo’s University who underwent their annual visit to the Occupational Health Physician Ambulatory (OHPA) of Palermo’s University Hospital, in the period between March and October 2011.

The questionnaire consisted in 22 questions regarding the satisfaction to attend the residency program.

Residents were informed that all the information gathered would have been kept confidentially and anonymous and they could not be identified as the data were

going to be presented in an aggregate form. Participation implied informed consent to the study and returning the questionnaire was on voluntary base.

Survey’s answers were entered in a database, generating an alfa-numeric code ID per each included subject. Data analysis was performed using the EpiInfo 3.5.1 software [16]. Absolute and relative frequencies were calculated for qualitative variables, while quantitative variables were summarized as means (standard deviation). Differences by groups for categorical variables were analyzed using the chi-square test. Differences in means were compared with Student t-test.

Univariate analysis between socio-demographic and educational characteristics was performed both for the perceived need for an International Elective and for the judgment on the residency program. The significance level chosen was  $p < 0.05$  (two-tailed).

### Results

Table 1 represents the sociodemographic and educational characteristics of the study sample: among the answering to the questionnaire, 178 were males (43%) and 236 females (57%). The mean age of participants was 29.7 (SD  $\pm$  3.5) years old, while the range shifted from 25 to 52 years

| n=414                     | Replace in a foreign country |          | If yes, what is the reason? |          |                          |
|---------------------------|------------------------------|----------|-----------------------------|----------|--------------------------|
|                           | Yes (264)                    | No (150) | Job opportunities           | Training | Professional improvement |
|                           | n (%)                        |          | n (%) (n=264)               |          |                          |
| <b>Gender</b>             | p-value 0.08                 |          | p-value 0.33                |          |                          |
| - Male                    | 122 (69)                     | 56 (31)  | 10 (8)                      | 23 (19)  | 88 (73)                  |
| - Female                  | 142 (60)                     | 94 (40)  | 21 (15)                     | 25 (17)  | 97 (68)                  |
| <b>Educational system</b> | p-value 0.02                 |          | p-value 0.01                |          |                          |
| - New (1st,2nd,3rd year)  | 180 (68)                     | 85 (32)  | 15 (8)                      | 31 (17)  | 135 (75)                 |
| - Old (4th,5th,6th year)  | 84 (56)                      | 65 (44)  | 16 (19)                     | 17 (20)  | 50 (61)                  |
| <b>Age class</b>          | p-value <0.01                |          | p-value 0.27                |          |                          |
| - $\leq$ 29 year old      | 157 (69)                     | 69 (31)  | 15 (9)                      | 28 (18)  | 115 (73)                 |
| - > 30 year old           | 107 (57)                     | 81 (43)  | 16 (15)                     | 20 (19)  | 70 (66)                  |
| <b>Residency Area</b>     | p-value 0.001                |          | p-value 0.23                |          |                          |
| - Clinical                | 65(54)                       | 55 (46)  | 8 (12)                      | 8 (12)   | 49 (76)                  |
| - Surgical                | 91 (80)                      | 22 (20)  | 8 (9)                       | 24 (26)  | 59 (65)                  |
| - Others (Services)       | 108 (60)                     | 73 (40)  | 14 (13)                     | 17 (16)  | 77 (71)                  |

**Table 3:** Univariate analysis between sociodemographic and educational characteristics and the perceived need for an International Elective.

-old (data not shown in the table).

Among the 918 residents, 414 completed and voluntarily returned the questionnaire (45.1%): 120 medical residents among 389 (31%), 113 surgical residents among 236 (48%) and 181 services' residents of 293 (62%) completed the questionnaire (respectively 29%, 27.3% and 43.7% of the population studied). The population sample was representative both for sex (p-value= 0.952) and Residency Area (p-value 0.957). For 84.5% of the responders, the residency course attended was the first choice. 54.6% of the sample were under 30 years old. 64% of the interviewed residents attended the new educational system (active since academic year 2008/2009).

Although the joined combination of a potential national and international "mobility" almost reached the 69.3% of positive answers, just 77% of this amount declared to have taken the chance to have a professional training experience outside of Palermo University (table 2).

About two third (63.8%) of the interviewed residents declared a willingness of transfer to a foreign country for a training or a work period. The main reason reported to explain this statement was to have better perspectives of professional improvement, followed by a perception of a more satisfactory training and better job opportunities. Half of the responders declared not to be satisfied about the quality of their pro-

fessional training (table 2).

Within the residents willing to leave for a foreign country, residents attending the old educational system listed the possibility of an IHE as a way to broaden their professional perspectives on the 18% of cases, twice as much as the answers coming from those belonging to the new educational system (9%); on the contrary, residents from new educational system considered an experience abroad as an opportunity for their professional improvement.

Univariate analysis showed that among medical residents of Palermo's University those more prone to undergo an IHE were, younger than 29 years old (69% vs 57%, p-value <0.01), attending the new educational system (p-value 0.02) and surgical residents (80%) compared to the ones belonging to the clinical (60%) and services' (54%) areas (p value 0.0001) (table 3). Univariate analysis between sociodemographic and educational characteristics and the judgment on the residency program showed no statistical significant differences concerning the dissatisfaction about residency programs according to sex, age class and educational system (table 4). A negative opinion about the formative quality performances of the residency program was significantly associated with surgical residencies (64%) compared to clinical (42%) and services programs (47%) (p-value= 0,002)

| n = 414                    | Is the residency program formative? |          | p-value |
|----------------------------|-------------------------------------|----------|---------|
|                            | Yes                                 | No       |         |
|                            | n (%)                               |          |         |
| <b>Gender</b>              |                                     |          |         |
| - Male                     | 94 (53)                             | 84 (47)  | 0.32    |
| - Female                   | 113 (48)                            | 123 (52) |         |
| <b>Educational system</b>  |                                     |          |         |
| - New (1st, 2nd, 3rd year) | 136 (51)                            | 129 (49) | 0.47    |
| - Old (4th, 5th, 6th year) | 71 (48)                             | 78 (52)  |         |
| <b>Age class</b>           |                                     |          |         |
| - ≤ 29 year old            | 118 (52)                            | 108 (48) | 0.32    |
| - > 30 year old            | 89 (47)                             | 99 (53)  |         |
| <b>Residency Area</b>      |                                     |          |         |
| - Clinical                 | 70 (58)                             | 50 (42)  | 0.002   |
| - Surgical                 | 41 (36)                             | 72 (64)  |         |
| - Others (Services)        | 96 (53)                             | 85 (47)  |         |

**Table 4:** Univariate analysis between sociodemographic and educational characteristics and the judgment on the residency program.

## Discussion

The prevalence of female sex among the participants was consistent with the population of medical residents observed in Italy [17]. The mean age of the sample was comparable with a previous study conducted among University of Palermo medical residents [17].

Since interviewed people were representative of the general population of medical residents attending Palermo's University, it was possible to conclude that residents younger than 29 years old, surgical residents and those attending the new educational system are willing to undergo an IHE, more than the other categories studied.

This assumption can be extended to those residents attending the new educational system, since generally they are younger compared to their colleagues who started their specialization with the old system.

It needs to be mentioned the discouraging data concerning the general dissatisfaction about the residency program attended by the interviewed people, especially by surgical residents interviewed. From the collected data it was clear that future surgeons are more prone to undergo an IHE. This can be easily connected to the not satisfying feeling due to the evaluation of their residency program, as showed in the results.

Another aspect that deserves attention is the fact that among the participants of the study willing to leave for a foreign country, residents attending the old educational system consider the possibility of an IHE as a way to implement their professional perspectives, twice as much as those belonging to the new educational system. Partially the explanation can be driven by a more realistic professional perspective of residents attending the old educational system, facing an approaching future full of work uncertainties, while younger residents look for a better professional improvement.

This last issue, as many others, deserve a closer examination of the originating causes that lay behind these answers. Nevertheless it has to be taken in consideration that the analysis of the data can result in certain biases. For instance it is not easy to compare new and old educational system, as well as the fact that questions were not properly validated and answers reflected subjective opinions.

In the end, it can not be underestimated an underlying doubt: are Italian's medical residents properly competent and ready to undergo an IHE? Are their practical and technical skills good enough to adapt in a different hospital setting of the EU countries? Aren't they overestimating an IHE because they lack any possible comparison standard?

The answers to all of the previous questions are relevant, considering that one of central themes of the coming years among EU countries will therefore represented by the competition between systems and models of health care and between medical professionals working in different EU contexts, and need to be analyzed in further developments of this study. The Italian Government should implement future medical education policy in order to provide for a Healthcare "without Border" in the EU.

## References

1. Murdoch-Eaton D, Redmond A, Bax N. Training healthcare professionals for the future: Internationalism and effective inclusion of global health training. *Med Teach* 2011;33:562-569
2. Drain PK, Holmes KK, Skeff KM, Hall TL, Gardner P. Global health training and international clinical rotations during residency: current status, needs, and opportunities. *Acad Med.* 2009 Mar;84:320-325
3. Haq C, Rothenberg D, Gjerde C, Bobula J, Wilson C, Bickley L, Cardelle A, Joseph A. New world views: preparing physicians in training for global health work. *Fam Med.* 2000 Sep;32:566-572.
4. Panosian C, Coates T. The New Medical "Missionaries" - Grooming the Next Generation of Global Health Workers. *N Engl J Med* 2006 Apr; 17;354.
5. Grudzen C, Legome E. Loss of international medical experiences: knowledge, attitudes and skills at risk. *BMC Medical Education* 2007 Nov;7:47.
6. Sawatsky A, Rosenman D, Merry S, McDonald F. Eight Years of the Mayo International Health Program: What an International Effective Adds to Resident Education. *Mayo Clin Proc.* 2010 Aug; 85:734-741.
7. Castagnoli C. Free Movement of Persons in the European Union. Available from: [http://www.europarl.europa.eu/ftu/pdf/en/FTU\\_2.3.pdf](http://www.europarl.europa.eu/ftu/pdf/en/FTU_2.3.pdf)
8. Legislative Decree n.368 of 17 August 1999. Available from: <http://>

[www.parlamento.it/parlam/leggi/deleghe/99368dl.htm](http://www.parlamento.it/parlam/leggi/deleghe/99368dl.htm)

9. Directive 2011/24/EU of the European Parliament and of the Council of 9 March 2011 on the application of patients' rights in cross-border healthcare. Available from: [http://eurlex.europa.eu/LexUriServ/LexUriServ.do?](http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:088:0045:0065:EN:PDF)

[uri=OJ:L:2011:088:0045:0065:EN:PDF](http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:088:0045:0065:EN:PDF)

10. Woloschuk W, Harasym PH, Temple W. Attitude change during medical school: a cohort study. *Med Educ.* 2004 May;38:522-534.

11. Gupta A, Wells C, Horwitz R, Bia F, Barry M. The International Health Program: the fifteen-year experience with Yale University's Internal Medicine Residency Program. *Am J Trop Med Hyg.* 1999;61:1019-1023.

12. Powell AC, Casey K, Liewehr DJ, Hayanga A, James TA, Cherr GS. Results of a national survey of surgical resident interest in international experience, electives, and volunteerism. *J Am Coll Surg.* 2009 Feb;208:304-312.

13. Thompson MJ, Huntington MK, Hunt DD, Pinsky LE, Brodie JJ. Research Reports - Educational Effects of International Health Electives on U.S. and Canadian Medical Students and Residents: A Literature Review. *J Acad Med.* 2003 Mar;78-3:342-347.

14. Questionnaire of Ministry for Education, University and Research (MIUR) evaluating standards and performances of the post graduate specialization schools. Available from: <https://loginmiur.cineca.it/>

15. Decreto Ministeriale 1 Agosto 2005 - Riassetto delle Scuole di Specializzazione in area sanitaria. Available from: <http://attiministeriali.miur.it/anno-2005/agosto/01082005.aspx>

16. Mannocci A, Bontempi C, Giraldi G, Chiaradia G, de Waure C, Sferrazza A, Ricciardi W, Boccia A, La Torre G. Epi-Info as a research and teaching tool in epidemiology and statistics: strengths and weaknesses. *Ig Sanita Pubbl.* 2012 Jan-Feb;68:85-96.

17. Amodio E, Tramuto F, Maringhini G, Ascianto R, Firenze A, Vitale F, Costantino C, Calamusa G. Are medical residents a "core group" for future improvement of influenza vaccination coverage in health-care workers? A study among medical residents at the University Hospital of Palermo (Sicily). *Vaccine.* 2011 Oct 19;29(45):8113-8117