

Mentoring of young professionals in the field of rheumatology in Europe: results from an EMerging EUlar NETwork (EMEUNET) survey

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Abstract Objective

To explore perceptions of, participation in and satisfaction with mentoring programmes among young clinicians and researchers in rheumatology in Europe. To identify mentoring needs and expectations focusing on gender-specific differences.

Methods

A survey on mentoring in rheumatology was distributed to young clinicians and researchers in rheumatology in Europe through the EMEUNET network.

Results

We received 248 responses from 30 European countries. Although 82% of respondents expressed the need for a formal mentoring scheme by EULAR, only 35% participated in mentoring programmes and merely 20% were very satisfied with mentoring. Respondents very satisfied with mentoring were more likely to participate in research, but not clinical mentoring programmes. Career mentoring was perceived as the most beneficial type of mentoring for career development by 46% of respondents, only 35% of respondents, however, declared the existence of career mentoring programmes in their country. There was no gender difference considering participation in mentoring programmes. Women, however, tended to be less satisfied than men with existing mentoring programmes and considered expectations from mentoring as more important for their career development, especially when pertaining to career planning, greater autonomy/responsibility and establishing new networks/collaborations.

Conclusion

Career mentoring, especially in the clinical setting, was recognised as a major unmet need of existing mentoring programmes in rheumatology in Europe. Gender-specific differences were identified in the expectations from mentoring. Given this and the importance of mentoring for career prosperity of young physicians and scientists, our survey represents the first step towards developing and refining mentoring programmes in rheumatology in Europe.

Key words

mentorship, rheumatology, needs assessment, gender issues

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Introduction

The Standing Committee On Postgraduate Medical Education (UK) established a definition of mentoring as “the process whereby an experienced, highly regarded, empathic person (the mentor), guides another individual (the mentee) in the development and re-examination of their own ideas, learning, and personal and professional development” (1). Effective mentoring, as reported by residents, research faculty and residency programme directors, plays an important role in the career of physicians, particularly during residency/specialty training and is a key to career development of research faculty in clinical translational science (2-6). Despite this, many residents or junior faculty do not have established mentoring relationships or are not satisfied with their mentorship (6-12).

Lack of effective mentoring has been cited as one of the major obstacles of career development in medicine, in particular when addressing the underrepresentation of women in academic medicine (13-17). There are significantly less women with an advanced academic degree or a leadership position in medicine in general, as well as in rheumatology, despite the almost equal number of women and men among rheumatology residents and rheumatologists (17-21). Furthermore, female residents are less likely to participate in effective career mentoring, more often receive inadequate information on what is required for career advancement, enunciate fewer strategies in identifying potential mentors and report a lack of (female) mentors and role models (10, 22-26).

As shown by the Johns Hopkins University and the National Centers of Leadership in Academic Medicine in the USA targeted institutional interventions in mentoring are necessary to increase recruitment and retention of women in academic medicine (13, 15). Formal mentoring programmes not only increase access to mentorship to underrepresented groups, such as women, but also enhance mentorship in general (5, 27). There is a need to implement structured mentoring programmes during residency training and for institutions to

equip the mentors with mentoring skills (2, 8, 27, 28).

EMEUNET (EMerging Eular NETwork) is a Europe-wide network of young rheumatologists and researchers established under the auspices of the European League Against Rheumatism (EULAR), a European umbrella organisation in rheumatology (29, 30). One of the major endeavours of EMEUNET is to foster the excellence in education of young rheumatologists and researchers in rheumatology in Europe (31). The objectives of the present survey were to explore the perceptions of young rheumatologists and researchers of existing mentoring possibilities in rheumatology in Europe and to examine their attitude towards implementing a formal mentoring programme by EULAR. Furthermore, participation in and satisfaction with existing mentoring programmes were evaluated and mentoring needs and expectations were identified, focusing also on potential gender-specific differences.

Methods

Survey design

A web-based 10-question ‘Survey-Monkey’ (Online Supplement 1) was designed by EMEUNET based on review of the literature on mentoring in academic medicine. Basic data on demographics, education and employment status were collected. The perceptions of mentoring possibilities in rheumatology in European countries, participation of respondents in research or clinical mentoring programmes and their attitudes toward establishing a formal mentoring scheme under the guidance of EULAR were investigated. Given the potential differences across Europe in interpreting what mentoring encompasses the existence of different mentoring options was examined, including mentoring during clinical or research training, career mentoring, specific project mentoring and training in specific methodologies/techniques. A Likert scale ranging from 1 (not at all) to 10 (entirely) was used to assess the satisfaction of respondents with how existing mentoring programmes cover their mentoring needs and expectations. The survey participants

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were asked which mentoring or training options, including career guidance, specific project mentoring and training in a specific methodology/technique would be most beneficial for their career development. Specific mentoring needs, including characteristics of a mentor, country and institution where searching for a mentor, period during career development and duration of mentoring, were addressed. Given the importance of self-identification of mentors in achieving an effective mentorship, the crucial aspects in determining the choice of a mentor were evaluated using 1 (most) to 5 (least important) Likert scale. Likert scale ranging from 1 (most) to 10 (least important) was used to evaluate the expectations from mentoring pertaining to career and personal development, the building of professional networks and developing professional competencies. In addition, the survey participants were asked whether they would be willing to serve as future mentors.

The link to the survey was disseminated across European countries via EMEUNET by contacting the rheumatology trainees' associations of the national societies and independent national young rheumatologists' organisations. Additionally, the survey link was sent directly to young rheumatologists or researchers using e-mail

contact lists of EMEUNET. The target population of the survey included young clinicians and researchers in rheumatology in Europe (25–40 years of age). Responses were collected from April 2011 to May 2012 and were analysed anonymously.

Survey analysis

Descriptive and summary statistics were calculated from responses based on the total number of responses per question. Chi-square or Mann-Whitney tests were used to assess potential gender-specific differences considering perceptions of and participation in mentoring programmes, satisfaction with mentoring and mentoring needs, with $p \leq 0.05$ being statistically significant. To determine whether responses from the UK ($n=53$, 21% of total responses) skewed the overall survey results, the survey was analysed both by including and excluding the responses from the UK.

Results

Demographics, education and employment status of respondents

We received 248 responses from 30 European countries (Fig. 1), of which 170 (69%) were women. The median age (25th–75th percentile) of respondents was 33 (30–36) years, with women [32 (30–35) years] being significantly

younger than men [34 (31.8–37) years] ($p=0.005$). The majority ($n=224$, 90%) of respondents, including all respondents from the UK, held a degree in medicine (referred to as medically educated) and 20 (8%) held a non-medical degree, including pharmacology, biochemistry, biology, molecular biology or molecular biomedicine (referred to as non-medically educated), while the remaining 4 did not specify their education. Detailed education and employment characteristics of medically and non-medically educated respondents are included in Table I.

Perception of existing mentoring possibilities

Half of 246 respondents ($n=128$, 52%) indicated that official mentoring schemes existed in their countries, with 159 (69%) and 126 (54%) of 232 respondents reporting the availability of mentoring during clinical and research training, respectively. The existence of overall career mentoring was reported by 80 (35%) of 231 respondents and of specific project mentoring by 125 (54%) of 231 respondents, while 108 (47%) of 231 respondents declared that training of specific methodologies or techniques was available. No gender differences were observed in reporting the availability of various mentoring and training options. According to re-

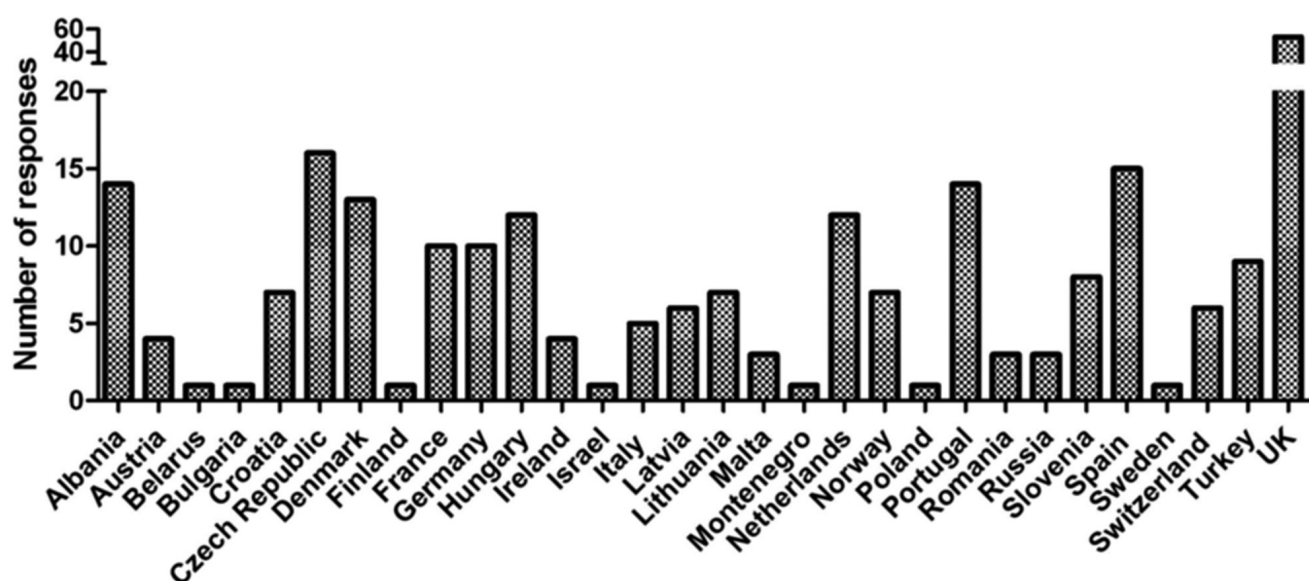


Fig. 1. Number of respondents per country.

Table I.

Education subgroup	Medical (n=224) n (%)	Non-medical (n=20) n (%)
<i>Specialty training</i>		
Rheumatology trainee/ certified rheumatologist	133 (59.4)	NA*
Paediatric rheumatologist	2	NA*
Internal medicine trainee	3	NA*
Trainee in physical and rehabilitation medicine	1	NA*
Specialty not specified	85 (37.9)	NA*
<i>Academic education</i>		
PhD student	25 (11.2)	8 (40)
PhD	33 (14.7)	9 (45)
<i>Employment status</i>		
Clinician	145 (64.7)	NA*
Research/academic position	33 (14.7)	17 (85)
Clinical & research position	2	NA*
Maternity leave	1	0
Unemployed	3	0
Not specified	40 (17.9)	3 (15)

Education and employment status of the respondents within each education subgroup. The number (percentage) – n (%) of total respondents within each subgroup, being involved in specific specialty training or with completed specialty, involved in PhD studies or holding PhD degree, and their employment status are provided. *NA: not applicable.

spondents' description, the term "mentoring" encompassed a broad range of developmental interactions from true career mentoring to clinical or research supervision.

Participation in and satisfaction with existing mentoring programmes

Eighty-five of 235 (34%) respondents participated in a mentoring programme. Among medically educated respondents, 45 of 224 (20%) were part of a clinical mentoring programme, 12 (5%) part of a research mentoring programme and 18 (8%) were part of both. Seven (35%) of 20 non-medically educated respondents and 3 additional respondents who did not specify their education were involved in a research mentoring programme. Regarding gender, 56 of 170 (33%) female and 29 of 78 (37%) male respondents participated in a mentoring programme ($p=0.64$). The existing mentoring programmes covered mentoring needs and expectations of respondents with a rating median of 6 on a 1 to 10 Likert scale. Only 32 (24%) and 25 (19%) of 132 respondents were very satisfied (rating score ≥ 8) regarding the mentoring needs and expectations, respectively, with significant proportion (19% and 24%, respectively) of respondents being not satisfied (rating score ≤ 3). Women tended

to be less satisfied than men with how mentoring programmes covered their needs (median of 5 compared to 6) and expectations (median of 5 compared to 6). Interestingly, the respondents being very satisfied with mentoring ($n=16$ out of 35) were significantly more likely to participate in research mentoring programmes. The same, however, was not true for respondents participating in clinical mentoring programmes ($n=18$ out of 60).

Type of mentoring needed for career development

Almost half ($n=104$, 46%) of 226 respondents selected career guidance – one to one mentoring by a senior dedicated scientist over a period of years, as most beneficial for their career development. One third ($n=77$, 34%) of 226 respondents felt that project mentoring – mentoring on a specific research project/fellowship with guidance from an expert would yield the most benefit for their career, while 43 (19%) considered short-term training in a methodology/technique being the principal need in their career development. When excluding respondents from the UK ($n=51$), the need for career guidance ($n=66$, 38%) and specific project mentoring ($n=69$, 40%) was similar. There were no differences between the gen-

ders with respect to the need for career guidance, project mentoring or training in a specific method/technique.

Period during career development and duration of mentoring

Considering the duration of mentoring, 119 (60%) of 200 respondents felt that long-term mentoring was necessary, while the remaining ($n=81$, 40%) preferred short-term mentoring (up to one year). Participation in a mentoring programme during rheumatology training was considered the optimal time for mentoring by more than 60% ($n=114$) of 183 medically educated respondents. Of the remaining, 35 (19%) preferred having a mentor during Master/PhD studies, 31 (17%) during clinical/post-doctoral career and only 3 (2%) during undergraduate studies prior to obtaining MD. Among the non-medically educated respondents, 10 of 14 (71%) would benefit most from mentoring during Master or PhD studies and the rest ($n=4$, 29%) during post-doctoral career. No gender-specific differences were observed with respect to duration of mentoring or the period during career development when mentoring would be most beneficial.

Choice of mentor

Ninety-eight (49%) of 202 respondents would search for a mentor in their own country, 69 (34%) in Europe and 35 (17%) worldwide. When selecting a mentor within their own country, 50 (51%) of 98 respondents would seek for a mentor in their current institution and 48 (49%) in an institution independent of their current workplace. Preference for the location of the mentor was significantly associated with the type of mentoring needed ($p=0.002$), with respondents searching for a career mentor or training in a specific method/technique more often preferring a mentor from their own country (59% and 53%, respectively) and respondents searching for a project mentor more often preferring a mentor from another European country (49%). When excluding responses from the UK the percentage of respondents who would search for career mentoring or training in a specific method/technique within

their own countries decreased to 40% and 45%, respectively.

Choosing between a clinical, research and industry mentor, 62 (52%) of 120 respondents would seek a clinical mentor and 58 (48%), including all non-medically educated respondents (n=11), a research mentor, with 62% (n=70) of 113 respondents selecting a mentor in the same field as their own, 9 (8%) in a different field, and 34 (30%) in either the same or a different field. No differences were observed between gender considering the country, institution or characteristics of a mentor. Fellows' career interest and mentor's expertise/area of interest were ranked as the most important factors in selecting a mentor (ranking scores 1-2) by more than 50% of the respondents (Table II).

Expectations from mentoring

Better career planning was ranked highest (median 4) among the expectations from mentoring, receiving ranking scores 1-3 by 43% of 211 respondents, while management of students was ranked lowest (median 6) receiving ranking scores 1-3 by only 29% of 210 respondents (Table III). In general, women tended to rank the expectations from mentoring higher than men (Table III). Better career planning and capacity building toward greater autonomy/responsibility were ranked highest (median 4) among the expectations from mentoring by women, while men ranked career promotion as highest (median 5). Additionally, better career planning was ranked highest (median 3) by the respondents searching for career guidance, while capacity building toward greater autonomy/responsibility was ranked highest (median 4) by the respondents seeking project mentoring.

Formal mentoring scheme under EULAR guidance

The majority of respondents, both genders equally, enunciated a need for an official European or international web-based mentoring scheme under the guidance of EULAR (n=181 of 221 respondents, 82%) and would be willing to serve as future mentors (n=193 of 219 respondents, 88%). The list of mentors, mentor's expertise/area of in-

Table II.

	Total number of responses	% of scores 1-2 (all)	Median (all)	Median (women)	Median (men)
<i>Aspect to determine choice of a mentor</i>					
Your career interest	205	52.7	2	2	3
Mentor's expertise/area of interest	205	56.6	2	2	2
Methodology/technique training options	200	46.0	3	2	3
Mentor's reputation	204	46.1	3	3	3
Experience of former mentees	200	45.0	3	3	3
Recommendation from present supervisor	204	38.7	3	3	3
Expertise of a mentoring institution	203	40.4	3	3	3
Technology/equipment of a mentoring institution	198	34.8	3	3	3

Aspects that determine the choice of a mentor. Each aspect was rated on a 5-point Likert scale ranging from 1 (most important) to 5 (least important). The ratings are represented by rating median. Total number of responses per aspect, the percentage of all respondents ranking the aspects of a choice of a mentor with a score of 1 or 2 and the ranking median of all respondents are given. The ranking median for each aspect, as evaluated by women and men separately, are also provided.

Table III.

List of expectations	Total number of responses	% of scores 1-3 (all)	Median (all)	Median (women)	Median (men)
Career promotion	210	34.8	5	5	5
More informed/appropriate career decision-making	209	39.5	5	5	6
Better career planning	211	43.1	4	4	6
Capacity building toward greater autonomy/responsibility	209	38.3	5	4	6
Development of communication skills	209	30.1	5	5	6
Development of project management skills	210	35.2	5	5	6
Establishing new networks/collaborations	211	39.8	5	4.5	6
Implementation of new ideas/solutions	211	35.5	5	5	7
Help to remove barriers	210	33.3	5	5	7
Management of students	210	28.6	6	5	6
Personal development	192	39.1	5	5	6

Expectations from mentoring. Each expectation was rated on a Likert scale ranging from 1 (most important) to 10 (least important). The ratings are represented by rating median. Total number of responses per aspect, the percentage of all respondents ranking the aspects of a choice of a mentor with a score of 1 to 3 and the ranking median of all respondents are given. The ranking medians for each expectation, as evaluated by women and men separately, are also provided.

terest and type of mentoring were listed as the most important information to be included in the scheme (Table IV).

Discussion

Mentoring as a partnership of personal and professional growth and development is central to the pursuit of academic medicine (32). Most rheumatology fellows who participated in our survey lacked an established or satisfactory mentorship despite articulating the need for mentoring. Very similar trends were reported in recent surveys on mentoring in the USA enrolling residents in otorhinolaryngology, internal medicine and orthopaedic surgery (7, 10, 11). In these studies, more than 90% of respondents agreed it was important to have a mentor during residency,

only 38-51%, however, had a mentor and only 17-44% were satisfied or extremely satisfied with their mentorship. Interestingly, respondents to our survey who were very satisfied with existing mentoring options were more likely to be part of a research but not of a clinical mentoring programme. This is in line with the results of the survey on research and academic training in rheumatology in the USA, where more than 50% of rheumatology fellows reported to be either very or extremely satisfied with their mentoring (33).

We highlight that career mentoring was perceived as the most beneficial type of mentoring for achieving career goals by almost half of the respondents to our survey. Nevertheless, there is a lack of career mentoring programmes

Table IV.

Information to be included in web based mentoring scheme	Total number of responses	% affirmative responses
List of mentors	194	94.6
Contact information of a mentor	185	91.1
Background of a mentor	185	91.1
Expertise/area of interest of a mentor	200	97.6
Training options within institution	187	92.1
Duration of mentoring	172	86.9
Type of mentoring available	192	95.5
Type of methodology training available	171	85.9
Possibility of interdisciplinary training	146	73.7
Description of technology/equipment	136	69.4
List of main projects	179	88.2
List of representative publications	146	73.4
List of collaborations	142	71.4
Possibility of industry partnering	101	50.8
Top two training institutions for a specific expertise field/ methodology	152	76.0
List/profile of mentees searching for mentor to facilitate mentor-mentee matching	160	80.4

Information to be included in European/international web-based mentoring scheme according to young clinicians and researchers in the field of rheumatology in Europe. The number of total responses and the percentage of affirmative responses are indicated.

for physicians in most countries (10, 34). This finding was confirmed also in our survey, which may explain the poor overall satisfaction of rheumatology fellows with existing mentoring programmes.

Some studies have reported a significantly higher proportion of male fellows in mentoring programmes (3, 25); a similar gender disparity, however, was not observed in our study. Nevertheless, women in our study tended to be less satisfied than men with how existing mentoring programmes covered their needs and expectations and ranked the expectations from mentoring as more important for their career development. The results of our study are in line with other studies on mentoring in academic medicine showing that women perceive mentoring as more important for their career and report less benefit towards career preparation, academic advancement and networking opportunities (6, 8, 35, 36). Gender-specific differences in the expectations from mentoring have to be considered when developing mentoring programmes. As pointed out by Lundberg *et al.*, EULAR and American College of Rheumatology (ACR) can serve as role models to decrease gender inequity in rheumatology on national levels with mentoring being a crucial step towards achieving

this (20). The majority of respondents to our survey would be willing to serve as future mentors, which is encouraging given the lack of female senior academics in rheumatology who could serve as valuable mentors for young women.

Self-identification of mentors by mentees and the right interpersonal match can foster a successful mentoring relationship (11, 37-42), as reflected also by the principal factors determining the choice of a mentor in our survey. Organisations like EULAR and EMEUNET can facilitate this process by providing direct mentor-mentee contacts, by establishing web-based mentor-mentee networks or by developing structured mentoring programmes. Most respondents to our survey reported the need for a formal mentoring scheme under the guidance of EULAR. Several formal mentoring activities, based also on the results of our survey, have already been successfully implemented by EMEUNET under the guidance of EULAR, specifically a peer review mentoring programme in collaboration with the Annals of Rheumatic Diseases and a career mentor-mentee network programme at the EULAR and ACR Annual Meetings (29, 30). In addition, a number of activities are on going or are planned to facilitate mentor-mentee contacts, such as preparing a list of

European mentoring/research institutions and collecting detailed information about European mentoring programmes (29).

Limitations of our study included the lack of precise conceptualisation of the term mentoring, the possibility that young rheumatologists/researchers who considered mentoring as important or were not satisfied with their mentorship were more likely to respond to the survey and the singular use of English language, which may have limited the participation of respondents who consider their English skill inadequate. Given a considerable overlap in interpreting what mentoring and supervision encompass, future surveys on mentoring in rheumatology should address in more detail the differences in perceptions of mentoring across the European countries. The small number of responses from some countries precluded detailed analysis of potential country-specific differences in perceptions and attitudes to mentoring. Since the response rate was very low for several countries, such as Sweden and Finland, and high for some other countries, country bias may have influenced results. An additional survey, aimed at achieving more weighted response rates in different countries should be performed in the near future, considering also the validation of the questionnaire in different languages by involving EMEUNET Country representatives (Country Liaisons).

In conclusion, this is the first survey reporting the perceptions of, satisfaction with and attitudes towards mentoring among young rheumatologists and researchers in rheumatology in Europe. Career mentoring, especially in the clinical setting, was recognised as a major unmet need of existing mentoring programmes. Given the significance of mentoring for career prosperity of young physicians and scientists, our survey represents the first step towards developing and refining mentoring programmes in rheumatology in Europe. To gain a comprehensive insight into mentoring in rheumatology the perspectives of rheumatology programme directors, faculty mentors and umbrella organisations in rheumatology should be taken into account.

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References

1. STANDING COMMITTEE ON POSTGRADUATE MEDICAL AND DENTAL EDUCATION (SCOPME): 22 SCOPME Report. 1998. <http://www.mcgl.dircon.co.uk/scopme/mentor5.pdf>.
2. FELDMAN MD, HUANG L, GUGLIELMO BJ *et al.*: Training the next generation of research mentors: the University of California, San Francisco, Clinical & Translational Science Institute Mentor Development Program. *Clin Transl Sci* 2009; 2: 216-21.
3. STAMM M, BUDEBERG-FISCHER B: The impact of mentoring during postgraduate training on doctors' career success. *Med Educ* 2011; 45: 488-96.
4. FELDMANN MD, AREAN PA, MARSHALL SJ, LOVETT M, O'SULLIVAN P: Does mentoring matter: results from a survey of faculty mentees at a large health sciences university. *Med Educ Online* 2010; 15: 5063.
5. MCKENNA AM, STRAUS SE: Charting a professional course: a review of mentorship in medicine. *J Am Coll Radiol* 2011; 8: 109-12.
6. DONOVAN A: Views of radiology program directors on the role of mentorship in the training of radiology residents. *AJR Am J Roentgenol* 2010; 194: 704-8.
7. HSU AK, TABAEE A, PERSKY MS: Mentorship in otorinolaryngology residency: the residents' perspective. *Laryngoscope* 2010; 120: 1263-68.
8. DONOVAN JC: A survey of dermatology residency program directors' views on mentorship. *Dermatol Online J* 2009; 15: 1.
9. LEVY BD, KATZ JT, WOLF MA, SILLMAN JS, HANDIN RI, DZAU VJ: An initiative in mentoring to promote residents' and faculty members' careers. *Acad Med* 2004; 79: 845-50.
10. RAMANAN RA, PHILLIPS RS, DAVIS RB, SILEN W, REEDE JY: Mentoring in medicine: keys to satisfaction. *Am J Med* 2002; 112: 336-41.
11. FLINT JH, JAHANGIR AA, BROWNER BD, MEHTA S: The value of mentorship in orthopaedic surgery resident education: the residents' perspective. *J Bone Joint Surg Am* 2009; 91: 1017-22.
12. OSBORN EH: Factors influencing students' choices of primary care or other specialties. *Acad Med* 1993; 68: 572-4.
13. MARK S, LINK H, MORAHAN PS, POLOLI L, REZNIK V, TROPEZ-SIMS S: Innovative mentoring programs to promote gender equity in academic medicine. *Acad Med* 2001; 76: 39-42.
14. KOSOKO-LASAKI O, SONNINO RE, VOYTKO ML: Mentoring for women and underrepresented minority faculty and students: experience at two institutions of higher education. *J Natl Med Assoc* 2006; 98: 1449-59.
15. FRIED LP, FRANCOMANO CA, MACDONALD SM: Career development for women in academic medicine: multiple interventions in a department of medicine. *JAMA* 1996; 276: 898-905.
16. YAGER J, WAITZKIN H, PARKER T, DURAN B: Educating, training, and mentoring minority faculty and other trainees in mental health services research. *Acad Psychiatry* 2007; 31: 146-51.
17. NONNEMAKER L: Women physicians in academic medicine. New insights from cohort studies. *N Engl J Med* 2000; 342: 399-405.
18. GORDON MB, OSGANIAN SK, EMANS SJ, LOVEJOY FH JR: Gender differences in research grant applications for pediatric residents. *Pediatrics* 2009; 124: e355-61.
19. ASH AS, CARR PL, GOLDSTEIN R, FRIEDMAN RH: Compensation and advancement of women in academic medicine: is there equity? *Ann Intern Med* 2004; 141: 205-12.
20. LUNDBERG IE, OZEN S, GUNES-AYATA A, KAPLAN MJ: Women in academic rheumatology. *Arthritis Rheum* 2005; 52: 697-706.
21. BICKEL J: Faculty Resilience and Career Development: Strategies for Strengthening Academic Medicine. In COLE TR, GRITZER, GOODRICH TJ (Eds.): *Faculty Health In Academic Medicine. Physicians, Scientists, and the Pressures of Success*. New York, Humana Press Inc 2009: 83-92.
22. MCNAMARA MC, MCNEIL MA, CHANG J: A pilot study exploring gender differences in residents' strategies for establishing mentoring relationships. *Med Educ Online* 2008; 13: 7.
23. BICKEL J, ROSENTHAL SL: Difficult issues in mentoring: recommendations on making the "undiscussable" discussable. *Acad Med* 2011; 86: 1229-34.
24. CAIN JM, SCHULKIN J, PARISI V, POWER ML, HOLZMAN GB, WILLIAMS S: Effects of perceptions and mentorship on pursuing a career in academic medicine in obstetrics and gynecology. *Acad Med* 2001; 76: 628-34.
25. COLEMAN VH, POWER ML, WILLIAMS S, CARPENTIERI A, SCHULKIN J: Continuing professional development: racial and gender differences in obstetrics and gynecology residents' perceptions of mentoring. *J Contin Educ Health Prof* 2005; 25: 268-77.
26. REISMAN AB, GROSS CP: Gender differences in the ability to identify a mentor at mentoring report: a multi-institutional survey. *Teach Learn Med* 2002; 14: 236-9.
27. PATEL VM, WARREN O, AHMED K *et al.*: How can we build mentorship in surgeons of the future? *ANZ J Surg* 2011; 81: 418-24.
28. BUDEBERG-FISCHER B, HERTA KD: Formal mentoring programmes for medical students and doctors – a review of the Medline literature. *Med Teach* 2006; 28: 248-57.
29. European League Against Rheumatism (EULAR) <http://www.eular.org>
30. EMergingEULARNETwork (EMEUNET) <http://emeunet.eular.org>
31. GAUJOUX-VIALA C, KNEVEL R, MANDL P *et al.*: Who are the young professionals in the field of rheumatology in Europe and what are their needs? An EMEUNET (Emerging EULAR NETWORK) survey. *Ann Rheum Dis* 2012; 71: 1432-3.
32. SAMBUNJAK D, STRAUS SE, MARUSIC A: A systematic review of qualitative research on the meaning and characteristics of mentoring in academic medicine. *J Gen Intern Med* 2010; 25: 72-8.
33. THE YOUNG INVESTIGATOR SUBCOMMITTEE OF THE AMERICAN COLLEGE OF RHEUMATOLOGY COMMITTEE ON RESEARCH: Rheumatology fellows' perception on training and careers in academia: the American College of Rheumatology Fellow Research and Academic Training Survey. *Arthritis Rheum* 2009; 61: 266-73.
34. FREI E, STAMM M, BUDEBERG-FISCHER B: Mentoring programs for medical students – a review of the PubMed literature 2000 - 2008. *BMC Med Educ* 2010; 10: 32.
35. DUTTA R, HAWKES SL, KUIPERS E, GUEST D, FEAR NT, IVERSEN AC: One year outcomes of a mentoring scheme for female academics: a pilot study at the Institute of Psychiatry, King's College London. *BMC Med Educ* 2011; 11: 13.
36. WYNN R, ROSENFELD RM, LUCENTE FE: Satisfaction and gender issues in otolaryngology residency. *Otolaryngol Head Neck Surg* 2005; 132: 823-7.
37. JACKSON VA, PALEPU A, SZALACHA L, CASWELL C, CARR PL, INUI T: "Having the right chemistry": a qualitative study of mentoring in academic medicine. *Acad Med* 2003; 78: 328-34.
38. DECASTRO R, SAMBUCCO D, UBEL PA, STEWART A, JAGSI R: Mentor networks in academic medicine: moving beyond a dyadic conception of mentoring for junior faculty researchers. *Acad Med* 2013; 88: 488-96.
39. SAMBUNJAK D, STRAUS SE, MARUSIC A: A systematic review of qualitative research on the meaning and characteristics of mentoring in academic medicine. *J Gen Intern Med* 2010; 25: 72-8.
40. BALMER D, D'ALESSANDRO D, RISKOW, GUSIC ME: How mentoring relationships evolve: A longitudinal study of academic paediatricians in a physician educator faculty development program. *J Contin Educ Health Prof* 2011; 31: 81-6.
41. COHEN JG, SHERMAN AE, KIET TK *et al.*: Characteristics of success in mentoring and research productivity – a case-control study of academic centers. *Gynecol Oncol* 2012; 125: 8-13.
42. HUSKINS WC, SILET K, WEBER-MAIN AM *et al.*: Identifying and aligning expectations in a mentoring relationship. *Clin Transl Sci* 2011; 4: 439-47.