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Education and training of public health professionals in the European Region: variation and convergence

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Abstract

Objectives To assess the exit competences of public health graduates across a diverse European landscape.

Methods The target population comprised 80 full institutional members of the Association of Schools of Public Health in the European Region with a participation rate 82.5 %. The web-based questionnaire covered institutional profiles and the ranking of exit competences for master of public health programmes, grouped according to WHO Essential Public Health Operations.

Results European schools and departments usually are small units, funded from tax money. A total of 130 programmes have been indicated, together releasing 3,035 graduates in the last year before the survey. All competence groups showed high reliability and high internal consistency ($\alpha > 0.75$, $p < 0.01$). The best teaching output has been assessed for health promotion, followed by disease prevention and identification of health hazards in the community, the least in emergency preparedness.

Conclusions Given the fragmentation of the institutional infrastructure, the harmonisation of programme content and thinking is impressive. However, the educational capacity in the European Region is far from being sufficient if compared to aspired US levels.

Keywords Competences · Survey · Public health education · Public health professionals

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Introduction

The Global Independent Commission on Education of Health Professionals for the twenty-first century (Frenk et al. 2010) stated that professional education had not kept pace with the new global challenges, largely because of fragmented, outdated and static curricula that produce ill-equipped graduates. The authors continue stating that there is a multiplicity of degrees, and the same degree could be acquired with highly variable curricular content, duration of study, quality of education, and competence achieved. This certainly is true not only for medical education but for the multi-professional discipline of public health with its diverse educational settings as well. The Lancet Commission counted 86 degree-granting public health institutions in Europe, including the Russian Federation but excluding Central Asia (Frenk et al. 2010/Web appendix 3) which corresponds approximately to 1 institution per 8.9 million inhabitants as compared to e.g., North Americas' 5.6 million or worldwide 15.1 million.

Today public health educational institutions and public health professionals are searching for an interface and synergies between science and practice. Public health is facing a number of profound and dynamic challenges related to its goals to increase healthy life years and reduce

health inequalities through a participatory approach, addressing multiple causes at socio-economic, environmental, and individual levels, and through involvement of different actors joined in multi-disciplinary teams of researchers, institutional decision makers, professionals, representatives of civil society and the private sector. Meeting these challenges implies profound changes for the public health sciences in terms of inter-professional training (Thistlethwaite 2012) which is supposed to enhance working together later on, implement multi-professionality into public health practice, and inter-disciplinarity into public health research. The Association of Schools of Public Health in the European Region (ASPHER) (ASPHER 2012) recognized this in the early 1990s, creating the slogan "Training for Public Health Practice and Research". Schools and Departments of Public Health (SDPH) train their students and public health professionals to be able to develop, organize, manage, evaluate, and adjust interventions aiming at the promotion of health and at the reduction of present and forecasted public health challenges. Building on the rich and diverse European cultural heritage, graduates must be able to handle population-health problems as well as public health systems and other man-made systems with health impact (Tulchinsky and McKee 2011). This is in line with the Bologna process and recent strategies of the (World Health Organization 2010a, b; Jakab 2011) defining standardized lists of competences required to perform specified service functions.

The Association of Schools of Public Health in the European Region has been involved in the development of standardized competences through its two working groups on Accreditation for Public Health Education and on Public Health Core Competences, and through the PEER pre-accreditation process since the late 1990s (ASPHER 2001; Goodman et al. 2008). The association participated also in the development of competence-based continuing education programmes (CE) (Mikeska 2009). The ASPHER working group on innovation and good practice in public health education (WGIGP) was established in 2010 in order to integrate activities related to education and public health practice by approaching public health educational institutions, professionals and employers. As public health professionals are trained in a variety of institutional settings (Beaglehole and Dal Poz 2003), acquiring different competences and expected to be effective in different environments it is of paramount importance for accountable performance to understand the different settings involved.

Starting with analysis of diversities among educational institutions, WGIGP decided to organize a survey among educational institutions—members of ASPHER with the core objective to assess the exit competences of their

graduates. We consider "competences" to be "a complex set of measurable behaviours made up of knowledge, skills and attitudes that can be shown to predict and measure effective performance" (Birt and Foldspang 2011). For this survey the Public Health Workforce has been defined to include all those responsible for providing the services (Gebbie et al. 2002) identified within the Essential Public Health Operations (EPHO). We understand EPHO to be a set of fundamental actions that address determinants of health, and maintain and protect population health through organized efforts of society. This definition has been derived from similar definitions of public health functions, such as the one by PAHO/WHO: "The indispensable set of actions, under the primary responsibility of the state, that are fundamental for achieving the goal of public health, which is to improve, promote, protect, and restore the health of the population through collective action" (PAHO/WHO 2002).

Methods

The survey of the SDPH was carried out from April to December 2011. The target population comprised the 81 institutional full members of ASPHER as of 31 Oct 2011 (http://www.aspher.org). If not explicitly stated otherwise we refer always to the European Region as defined by WHO. Associated members of ASPHER outside the European Region such as institutions from Canada, Mexico or Syria are not included. Neither have institutions been included which are linked to ASPHER only through task-forces like the European Academic Global Health Alliance (EAGHA 2012). For the purpose of the current analysis the Institute of Medical Sociology, the Academy of Public Health and the Northrhine–Westphalian Institute of Health and Work in Düsseldorf/Germany are counted as one common provider of postgraduate public health training. The School of Public Health in Haifa, Israel is added as a recent new member. As 66 out of the remaining list of 80 SDPHs answered the questionnaire, the resulting participation rate was 82.5 %. The SDPH being members of ASPHER represent 38 countries within the European Region (WHO) out of which 36 answered the survey; only Belgium and Iceland are not represented.

The research instrument was designed as web-based questionnaire (http://www.aspher.org/forms/quest10/main/question1). It covers the general SDPH profiles (Institute of Medicine 2003) followed by a section where SDPH estimated their output in transferring selected core competences at the level of master of public health programmes. Basic and advanced core competences were selected by WGIGP for five out of the six domains

published by ASPHER (Birt and Foldspang 2011) and grouped in a matrix table. As at the time of designing the questionnaire EPHO were not yet available, the 11 Essential Public Health Functions (EPHF) of PAHO (CDC/PAHO 2012; World Health Organization 2003) were used which required the later re-grouping of competences for the analysis according to EPHO (World Health Organization 2010b). In order to check for coherence, vertical and horizontal lists of core competences have been extracted and evaluated through ten pilot assessments and a workshop on Public Health Competencies in Belgrade (ASPHER 2010). SDPH determined their teaching output in terms of the selected competences for each EPHO according to a Likert scale (5, highest to 1, not transferred).

The coding of the answers in the database was double checked. In the case of several programmes in the same institution only the main one is coded for further analysis. Volume and structure of the academic programmes are described in units according to the European Credit Transfer System (ECTS) which does not allow for a differentiation between ECTS of the value of 25 or 30 h of student workload (European Ministries of Higher Education 2009). Where necessary, 30 h per unit of ECTS have been calculated and for supervised/presence hours up to 50 % i.e., 15 h. UK credits (CATS), when given instead, where re-calculated as 2 UK Credits equal to 1 ECTS. Likewise SDPH may have calculated full-time equivalents (FTE) in different ways, e.g., based on obligatory teaching hours per staff, which can vary between 8 and 14 h of teaching (45 min/h) for lecturers during the semester weeks (in average 28 per year). Therefore also for FTE only rough estimates can be provided.

For the estimate of consolidated success rates, the number of graduates/last year was divided by the number of enrolled students/last year, both figures corrected for non-correspondence, based on the assumption that the numbers of enrolment and graduation in successive years are similar.

Reliability of all scales was tested using Cronbach's *alpha* for the assessment of internal consistency of scales, i.e., the average of all correlations among the different questions in the scale (Peacock and Peacock 2011). $\alpha > 0.75$ has been reached across all EPHO indicating sufficient internal consistency of scales ($p < 0.05$, Hotelling's *T*-Squared Test), for details see Table 3. After confirmation of reliability the information within each EPHO was aggregated into only one aggregate variable. Potential differences were analysed by analysis of variance (ANOVA) and differences considered statistically significant at $P < 0.05$.

The Statistical package STATISTICA (Stat-Soft, Inc., Tulsa, OK, USA) was used for data analysis.

Results

The general profile of European schools and departments of public health

With one exception all SDPH provided the basic administrative data, which have been included into the so far incomplete ASPHER database. Almost two-thirds (41 since 1991) were established during the last two decades. Most SDPH are university based (Table 1), only two are private. Only nine SDPH are based mainly on projects, grants or student fees and only one on endowments.

Across 130 formal education programmes the 66 SDPH participating produced 3,035 graduates per last year (977 bachelor degrees, median 55 per institution; 1,309 master degrees according to the 2nd Bologna cycle, median 27; 207 doctoral degrees, median 6; 542 postgraduate master or

Table 1 Descriptive profile of Schools and Departments of Public Health (SDPH) in the European Region (data extracted from the responses to the 2011 survey on SDPH of ASPHER in the European Region)

Category	SDPH	
	Number	% (N = 66)
University-based SDPH	57	86.4
University or state are main source of funding	46	69.7
Involvement in other medical programmes	52	78.8
Lecturers from other programmes	57	86.4
Active methods of learning (small groups, practice work, field work)	63	95.5
Modules for distance learning	30	45.5
Existence of computer lab.	57	86.4
Regular update of website	59	89.4
Connected to social networks	23	34.8
Access to public health libraries	36	54.5
Access to bibliographical databases	43	65.2
Practice links (public and private institutions, Non-Governmental Organisations)	63	95.5
Consultancy and advisory functions (research, technical assistance, staff development, appointed to advisory boards)	56	84.8
Public health research	54	81.8
Research training	57	86.4
Alumni surveys executed	35	53.0
Curricula modified last year	46	69.7
Ready to share experience	44	66.7
Provide examples of best practice	36	54.5
Interested in student mobility	52	78.8

Table 2 Subject areas offered by Schools and Departments of Public Health (SDPH) in the European Region (data extracted from the responses to the 2011 survey on SDPH of ASPHER in the European Region)

Subject area	Number of institutions indicating teaching in the subject area	Number of institutions indicating number of hours (45 min)	Number of teaching hours, median and range (minimum–maximum)
Health systems and management	62	36	100 (6–1185)
Epidemiology	61	40	112 (8–675)
Statistics	61	38	73 (6-675)
Health promotion	60	37	54 (4-450)
Health policy	58	33	50 (2-451)
Environmental/occupational health	57	36	68 (2-1324)
Health economics	57	34	42 (2-893)
Prevention	55	28	45 (4-567)
Global health	54	34	40 (2-320)
Informatics	45	28	48 (2-1347)
Behavioural sciences	38	28	48 (4-565)
PH genomics	19	13	25 (2-540)

MSc degrees, median 20). International students make up for 20.5 % of the total enrolment.

The estimated FTE of teaching staff is available for 40 institutions, median 20 (range from the minimum of 1 to the maximum of 106). Faculty members from almost all institutions are also involved in various other programmes, such as medicine or nursing, dentistry, pharmacy, law, sociology, psychology, and in addition indicate the involvement of lecturers from other faculties in their own academic programmes.

Publications of their staff in scientific journals are indicated by 44 institutions summing up to 2,693. Thereof 1,214 are published in CC or ISI journals (median 18, range 2–208). However, for faculty recruitment the importance of field practice is rated on a scale of 1 (most)– 4 (least) with a mean level of only 2.4.

The teaching programmes of schools and departments of public health

In the European Region an even nationally significant diversity can be observed (World Health Organization 2006; Joint Learning Initiative 2004; Sursock and Smidt 2010; Frenk and Gonzalez-Block 2008) of different degrees in public health and high variation of curricular content, duration of study, number of students, and national accreditation. The majority of SDPH offer programmes according to Bologna format, predominantly Master of Public Health (or Health Sciences; others refer to management, nutrition, health promotion, epidemiology or environmental health; one programme is online). However, many SDPH indicate also traditional postgraduate master programmes of a non-Bologna format. Together with the

47 Bologna programmes more than 80 masters are offered in the European Region. In addition 18 SDPH offer bachelor programmes. As regards CE, there are only 23 institutions offering short courses, modules or summer schools, mainly in Public Health and/or Health Management.

European SDPH widely accept that education and training of public health professionals should include "not only five core components of public health (epidemiology, biostatistics, environmental health, health service administration or management, and social and behavioural sciences referring to disease prevention and health promotion) (PHETICE 2008) but also critical new areas like informatics, genomics, communication, community-based participatory research, global health, ethics and last but not least policy and law (e.g., Ruetten 2012). However, the core subjects dominate the programmes, epidemiology maintaining the first rank in the list of contents (Table 2).

Potential public health job performance of schools and departments of public health graduates

The major focus of the survey has been on the dimension of competences for good public health performance (World Health Organization 2006; Joint Learning Initiative 2004). As outlined in the methods section the grouping of competences is based on European Public Health Operations (EPHO). Each of ten EPHO comprises several competences to cover broad public health performance from the least to the most complex tasks in the job environment of public health professionals. All selected competences within each EPHO showed high reliability and high internal consistency ($\alpha > 0.75$, $p < 0.01$), when SDPH were

assessing their outputs on the Likert scale. It is therefore expected that they are a homogenous group of respondents. The potential public health performance of SDPH graduates within all composite competences of ten EPHO is presented in Table 3. SDPH assess their best output to be in the field of health promotion (EPHO6), followed by disease prevention (EPHO5) and identification of priority health problems and health hazards in the community (EPHO2), while they see the least success regarding EPHO3 dealing with preparedness and planning for public health emergencies.

Furthermore, the aggregate EPHO variables have been analysed according to the following dimensions:

- time dynamics of establishment,
- delivery of programmes in Bologna format,
- delivery of MPH in Bologna format,
- delivery of CE,
- utilization of active teaching methods,
- recent curricular innovations, and
- indication of best practices.

Whereas the general descriptive profiles of SDPH and their programmes indicated great diversity (Table 1), significant differences could not be identified for these independent variables with the following exceptions:

1. SDPH with the capacity to organize doctoral programmes in public health are grading their outputs slightly better (except for EPHO10, significant at the level of $p < 0.01$ for EPHO1, EPHO2 and EPHO3 with t is 3.476, 2.404 and 2.547); see Fig. 1.
2. SDPH with CE/LLL programmes showed significantly better grading for EPHO4, 6, 7, 8 and 9 ($p < 0.05$, while t is 2.509, 2.211, 2.901, 2.023 and 2.531). The content of these EPHO's constitutes a "New Public Health" and is particularly relevant to knowledge and skills necessary for good governance in public health and the health system (Fig. 2).

Discussion

The process of globalization has brought about a renaissance of Public Health as New Public Health (Frenk 1993) linking "… the classic public health issues of environmental sanitation, hygiene, epidemiology … to the newer issues of universal health care, economics, and management of health systems" (Roemer 2000). In the European Region the concept of a New Public Health has become the guiding principle for the teaching of public health as an interdisciplinary and multi-professional discipline in its own right, comprising medical and social sciences (Georgieva and Burazeri 2005; Tulchinsky and Varavikova 2008).

Limitations of the ASPHER survey

There are several limitations to our approach:

1. SDPH may overestimate the qualifications of their graduates. This, however, is to some degree unlikely as the analysis shows that their estimates of aggregate competences are very close across various categorizations and for several EPHO even are similar to the employers' estimates of desired performance (pilot analysis of the ongoing follow-up survey, unpublished data).
2. The competences selected for the questionnaire in order to indicate output of SDPH may be inadequate to characterize EPHO appropriately. This, however, is unlikely as the value for alpha is always above 0.75 (see Table 3).
3. The participating SDPH do not sufficiently represent the real situation in the European Region, although the response rate overall was 82.5 %, as there are several institutions delivering degrees in the field of public health areas without belonging to ASPHER, for example as members of the European Academic Global Health Alliance (2012). EAGHA is an ASPHER taskforce comprising members and non-members. A major additional effort would be necessary to complete the picture going beyond the ASPHER membership.
4. The response rate for single questions varied considerably, partly because a certain question did not apply (e.g., on bachelor programmes of SDPH without this offer), partly because of differing qualification of the person filling in the questionnaire. We had not the capacity within the funded project to control for this possibility. Thus it remains a weakness of the present study.

The diversity of European higher education in public health

The majority of SDPH relies obviously on financial support coming from tax money The potential of donations or endowments is by no means fully exploited. The typical European SDPH is relatively small at least if compared to American institutions. The median for FTE lies with only 20 FTE lecturers. Therefore, the need for cooperation with other faculties or institutes is high.

Although most SDPH have introduced programmes in the Bologna format, almost an equal number of programmes are still offered in traditional designs. In quantitative terms the backbone is a master programme, whether according to Bologna or not. The number of international students is limited as is the number of programmes offered in English, although many SDPH favour

Table 3 Potential public health performance of graduates from Schools and Departments of Public Health (SDPH) estimated using a Likert scale (5—highest to 1—not transferred)

|	No. of institutions answering	Mean of Likert values	Standard deviation	Internal consistency
EPHO1. Surveillance of diseases and assessment of the population's health				
Analyse prevalence and incidence	62	4.52	.74	0.46
Do regression analyses	62	3.68	1.18	0.53
Interpret the Gini-coefficient	61	2.66	1.22	0.29
Apply the concept of Salutogenesis (Antonovski)	60	3.47	1.31	0.37
Contribute to a health impact assessment	62	3.77	1.05	0.56
Contribute to a health report	62	4.26	.79	0.61
Prepare an option appraisal	62	3.52	1.25	0.48
Contribute to a health needs assessment	62	4.05	.86	0.46
α: 0.75				
EPHO2. Identification of priority health problems and health hazards in the community				
Analyse epidemiological confounders	62	4.23	.95	0.67
Calculate DALY's	60	3.17	1.15	0.51
Analyse the influence of social determinants on population health	61	4.33	.83	0.78
Analyse the influence of physical. biochemical and biological determinants on population health	62	4.02	.95	0.73
Develop efficient political and managerial health strategies	62	3.89	.83	0.32
α: 0.80				
EPHO3. Preparedness and planning for public health emergences				
Prepare a disaster management plan	60	2.75	1.28	0.85
Mobilize emergency response team	60	2.58	1.23	0.87
Forecast social disasters (e.g., language change)	60	2.22	1.04	0.85
Participate in disaster simulation exercises	60	2.35	1.15	0.86
Cope with the consequences of disasters	60	2.57	1.17	0.89
α: 0.95				
EPHO4. Health protection operations (environmental, occupational, food safety and others)				
Assure the quality of policy programmes	60	3.45	1.11	0.62
Communicate social regulations to target groups	60	3.37	1.15	0.71
Enforce control regulations on food safety	60	2.85	1.23	0.65
Strengthen and further develop public health relevant legislation	60	3.10	1.05	0.77
Initiate legal procedures to develop proper sports facilities for facilitating physical activity	60	2.55	1.17	0.66
α: 0.86				
EPHO5. Disease prevention				
Assess immunization and screening programmes	61	3.70	1.13	–
EPHO6. Health promotion				
Apply the principles of the Ottawa Charter and the setting approach	61	4.07	1.01	0.71
Perform effect evaluation of prevention and promotion programmes	61	4.07	0.85	0.66
Communicate evidence on social determinants to lay, professional and decision maker's audiences	61	4.00	0.98	0.71
Communicate evidence on physical/biological determinants to lay, professional and decision makers' audiences	61	3.77	0.99	0.64
Analyse the environment for a setting approach (acc. to Ottawa Charter)	61	3.87	1.10	0.88
Plan and implement health prevention and promotion programmes	61	4.16	0.90	0.71
α: 0.90				

Table 3 continued

|	No. of institutions answering	Mean of Likert values	Standard deviation	Internal consistency
EPHO7. Assuring a competent public health and personal health care workforce				
Make use of Problem Oriented Learning as part of public health education programmes	59	3.59	1.21	0.36
Execute a needs assessment for Life Long Learning of the Health Workforce	59	3.29	1.15	0.58
Organize the adequate representation of minorities in study programmes	59	3.08	1.22	0.62
Integrate new environmental issues into study programmes	59	3.02	1.11	0.65
Mobilize the academic and political authorities to increase the training capacity and quality in public health education	59	2.97	1.10	0.67
Design health promotion activities within the student population	59	3.68	1.25	0.51
α: 0.80				
EPHO8. Core governance. financing and quality assurance for public health				
Assess public health workforce capacity	40	3.60	1.24	0.62
Lead a group discussion and operationalise the outcome	40	3.73	0.88	0.68
Deal with planning and management of measures against air pollution	40	3.05	1.13	0.25
Provide policy counselling	40	3.28	0.82	0.69
Mobilize human capital for public health planning and management in cross-sectoral governance	40	3.18	1.06	0.74
Measure health indicators that reflect access to health services and health disparities	40	4.13	0.85	0.62
Empowerment of disadvantaged groups to demand equitable access	40	3.48	0.88	0.55
Plan distribution of health facilities and means of transport	40	3.23	1.10	0.59
Analyse financial barriers to access health care and models of health insurance	40	3.53	1.15	0.71
Integrate person based health promotion and prevention into individual health care services	40	3.55	0.90	0.52
Update on national and international quality indicators	40	3.73	1.09	0.61
Involve stakeholders and respective community groups in defining quality indicators	40	3.43	0.95776	0.56
Disseminate information about quality of care	40	3.68	0.97	0.74
Follow-up on hospital acquired infections	40	3.45	1.18	0.39
Contribute expertise to evidence based policy making	40	3.63	0.95	0.62
α: 0.91				
EPHO9. Core communication for public health				
Conduct focus groups	60	3.68	0.98	0.58
Organize health household surveys	60	3.58	1.11	0.60
Work with civil society and other organisations on social development	60	3.57	1.13	0.77
Work with civil society and other organisations on environmental issues	60	3.30	1.05	0.73
Manage Health Conferences with policy makers/stakeholders	60	3.28	1.08	0.74
Initiate community-based health promotion activities with the civil society	60	3.67	1.00	0.63
α: 0.87				
EPHO10. Health-related research				
Critically appraise research publications in public health	62	4.34	0.92	0.60
Integrate interdisciplinary research teams	62	3.85	1.08	0.66
Use indicators of air pollution to derive further research questions	62	3.11	1.12	0.32
Communicate successfully with funding agencies	62	3.21	1.12	0.70
Perform action research	62	3.34	1.17	0.63
α: 0.80				

Data extracted from the responses to the 2011 survey on SDPH of ASPHER in the European Region, internal consistency tested by Cronbach' *alpha* as the average of all correlations among the different questions in the scale (corrected item−total correlation)

Fig. 1 Outputs of SDPH in transferring knowledge and skills to assure the best possible performance of EPHO's according to the delivery of academic programmes (the *rays* in the spider web indicate the ranks of the 5-point Likert Scale)
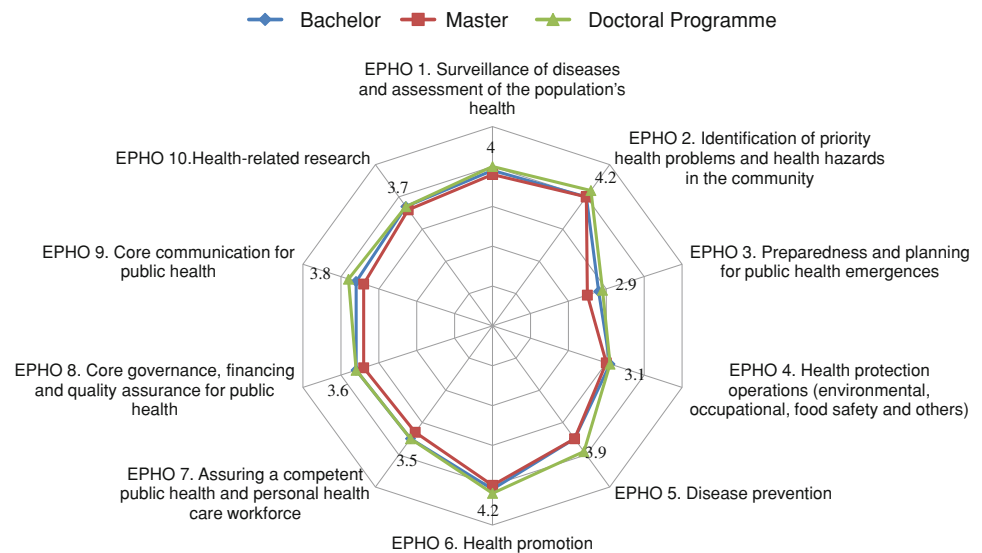
Data are extracted from the responses to the 2011 survey on SDPH of ASPHER in the European Region.

Fig. 2 Outputs of SDPH in transferring knowledge and skills to assure the best possible performance of EPHO's according to the delivery of continuing training in public health (The *rays* in the spider web indicate the ranks of the 5-point Likert Scale)
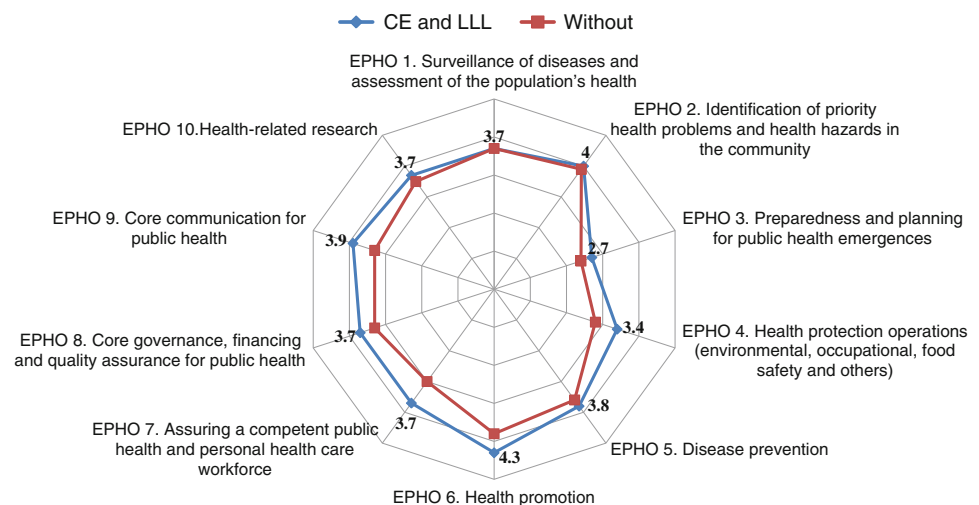
Data are extracted from the responses to the 2011 survey on SDPH of ASPHER in the European Region.

student mobility and sharing of knowledge. CE programmes are not sufficiently developed, although they also could—as paid teaching—contribute to the institution's income. Only a quarter of SDPH offers distance learning and field practice is still undervalued in teaching and recruitment. Likewise only one-third is connected to social networks. Summarizing there is still a significant backlog in modernity. On the other hand, certain positive trends can be recognized, e.g., that the new emerging fields—genomics and global health—take already a considerable part of resources. However, with regard to preparedness and planning for public health emergencies (EPHO3) SDPH assessed their training output as insufficient (Lurie et al. 2006). Furthermore almost two-thirds of SDPH are engaged in policy development and advocacy, which takes

up the call for improving leadership in education through promoting political skills (Nordquist and Grigsby 2011). In the area of science and research the balance is quite satisfactory as almost half of all publications appeared in CC or ISI journals.

Harmonising exit profiles of SDPH graduates

The most interesting result is the astonishingly high agreement on the estimates of what kind and level of knowledge and skills SDPH provide to equip the graduates for their professional career. This is entirely unexpected given the enormous diversity and fragmentation of the institutional landscape. We think that this is a positive result of the permanent discussion of curricular issues since

the early 1990s and the introduction of the PEER Review at that time (ASPHER 2001). Recently the establishment of an Agency for Public Health Education Accreditation (APHEA 2012) created a strong incentive to support further alignment. Also the filling in of the quite extensive questionnaire may have positive side-effects enhancing problem awareness and further improvement. A very simple immediate result of the survey should not be underestimated, the update of the ASPHER database of members and their contact details.

Vis-a-vis the variation of public health services and professional qualification in the European Region it is certainly difficult to quantify the need for public health professionals. A rough estimate can be provided in making use of analyses from the United States (APHEA 2008). For a population of projected 325 million in 2010, a number of 7,15,000 professionals working in the area of public health are calculated, corresponding to 220/1,00,000 population. Recalculated for the 27 EU member states alone with a population of 501 million (January 2010) this would result in a workforce of 1.1 million public health workers at the US ratio. Given a modest average attrition rate around 2 % per year (World Health Organization 2010a), up to 22,000 professionals had to finish some formal education for public health each year. Referring to the total population of the European Region as defined by WHO of an estimated 800 million, the workforce requirement would amount to 1.8 million with an annual output of 36,000 fresh professionals.

Our survey resulted overall in an average of 46 (3,035/66) graduates per institution per year (all programmes of the Bologna cycle and equivalents). Using the number of graduates required each year in the EU as calculated above (22,000/46) 478 institutions of European average size would be required for this output. ASPHER had—end of 2011—81 member institutions including 16 outside the European Union. For the entire European Region 783 SDPH of average size are needed.

Capacity to offer CE for the same number of professionals would require 182 institutions with an output of 121 certified trainings in average (2,772/23). Less than one-third of ASPHER member institutions including those outside the EU indicated such activities in the survey.

In Summary, there is a lack of modernity regarding CE, use of English for training and partly in undergoing accreditation. However, in spite of the enormous fragmentation of the institutional infrastructure and the teaching/training capacities the harmonisation of programme content and thinking based on EPHO is impressive. The size and total number of SDPH in Europe—whether referring to EU member states alone or to all countries in the European Region as defined by WHO—is far from being sufficient if compared to the aspired US levels.

In this survey European SDPH have been investigated for the first time in a systematic way and their output been measured by the estimate of selected competences, transferred to graduates in the institutional training programmes.

The process of trans-European harmonisation of public health education and exchange of best practices needs considerable enhancement and support if to become equal to the institutional infrastructure and programme development in North-America.

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