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EAACI POSITION PAPER

Current allergy educational needs in primary care. Results of the EAACI working group on primary care survey exploring the confidence to manage and the opportunity to refer patients with allergy

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Abstract

The aim of this survey was to explore the specific educational needs of a cohort of European GPs with regards to allergy training so that future educational initiatives may better support the delivery of allergy services in primary care. Method: This study took the form of a cross-sectional observational study in which a structured electronic questionnaire was distributed to primary care providers, in eight languages, across 8 European countries between September 2019 and November 2019. Data associated with demographic parameters, professional qualifications, type of employment, level of confidence regarding competencies for diagnosis and treatment of allergic diseases, referral of patients to allergist and preferred method of learning and assessment were collected. A 5-point Likert scale was used to assess level of confidence. Exploratory analysis was carried out. Results: A total of 687 responses were available for analysis, with 99.3% of responders working within Europe. 70.1% of participants were female; and 48.0% and 48.0% of participants respectively had received some undergraduate and/or postgraduate allergy education. Confidence in dealing with different aspect of allergy management differed between countries. The main reason for specialist referral was a perceived need for tertiary assessment (54.3%),

and the main barrier for referral was the consideration that the patient's condition could be appropriately diagnosed and treated in a primary care facility. Up to 44.7% and 55.3% of participants reported that they preferred e-Learning over traditional learning. Conclusions: This study identified the specific areas of skills training and educational needs of GPs in managing allergic conditions in primary care, and provided insights into possible strategies for more feasible and cost-effective approaches.

KEYWORDS
allergy diagnosis, allergy treatment, education, learning methods, primary care

1 | INTRODUCTION

Over the last few decades, considerable advances have been made in our understanding of allergic diseases, particularly with regards to the aetiology of disease, underlying mechanisms (immunology), and clinical parameters such as approaches to diagnosis, and treatment. Allergic diseases pose a huge burden on individuals, the community and the healthcare system.[1] Allergic diseases are highly prevalent and have been identified as a high burden public health problem which needs to be urgently addressed.[2] In addition, the associated direct and indirect healthcare costs of these diseases are extremely high.[3]

Despite this heterogeneity in allergy, services have been identified[4] and few medical school faculties regard allergology as a specific and discrete subject area; consequently, undergraduate training in this field is deficient. Consequently, most people with allergic conditions are initially assessed by a primary care physician who may not be adequately skilled in the management of allergic diseases.[5,6]

The World Allergy Organization (WAO) issued a warning concerning the gaps between knowledge and practice in the field of allergy management, subsequently presenting its position paper 'Recommendations for Competency in Allergy Training for Undergraduates Qualifying as Medical Practitioners'.[7] To date, there is little evidence of an appetite to incorporate allergy in the undergraduate curriculum.

In Europe, about 30% of the population suffer from an allergic disease and the prevalence is increasing.[8] Greater knowledge of allergic diseases by healthcare providers would be expected to result in more rapid diagnosis, more adequate treatment, and better quality of life for those who suffer from allergic diseases.[2]

Primary care (PC), which includes general practitioners (GP), family practitioners, family physicians or paediatricians, can reinforce its role in health care as the first point of contact for patients with allergic symptoms.[5] In fact, the need for primary care to be involved in the management is critical as in many areas of Europe,[9] there are insufficient allergists to support the rising prevalence of allergies.[5,6] Herein lies the challenge; although PC providers are generally well trained, evidence suggests a deficiency of knowledge, skills and resources to independently manage patients with allergies independently with confidence.[5,6] Attempts to circumvent this barrier to allergy management have been developed and take the form of initiatives such as clinical algorithms[10] or allergy management support systems in primary care.[11] However, these initiatives do not address the fundamental issue of PC education of allergy at undergraduate and postgraduate levels, which clearly needs to be improved in order to improve outcomes.[7] In the UK, a national allergy education strategy is being devised covering all healthcare professionals and this has the potential to be a basis for wider work across Europe.[12]

The European Academy of Allergy and Clinical Immunology (EAACI) working group on PC recognizes the needs of our patients, health systems and the scientific community, to improve the quality of practice, incorporating a patient-centred approach, developing integrated care models and better defining the role of PC in the diagnosis and management of allergic diseases. In line with the EAACI white paper strategy document,[13] it is further recognized that there is a strong need to reinforce the collaboration and communication between primary care and specialized care for patients with allergic disease(s).

Although some regional scientific allergy societies and specialists have developed continuous medical education modules on this topic, for a consistent approach it is necessary to know and understand the needs perceived by primary care professionals.[6] A previous EAACI primary care working group survey on educational needs was carried out from June to September 2014, and the results were reported in 2017. In this study, self-declared gaps in knowledge were expressed for most manifestations of allergy with a correspondingly high self-expressed educational need.[14]

There is clearly a need to bridge the educational gaps of healthcare providers in PC. The explosion of allergy-related disorders coupled with their increased prevalence has left GPs feeling vulnerable, particularly as allergy appears to be virtually excluded from both undergraduate and postgraduate GP training,[15] in spite of repeated calls for improved education to improve outcomes,[16] with deficits being recognized across healthcare systems.[17] These concerns are shared with paediatricians, who are often the first point of call for children in many countries.[18] It is of note that one of the consequences of this skill and knowledge deficit is many unnecessary referrals to specialist clinics.[19] Work has also been undertaken to describe the core competencies required by GPs,[20] allied health care providers,[21] and those which might be needed to provide a specialized level in primary care (GP with a specialist interest in allergy

(GPwSI)). GPwSIs are generally GPs who also work part-time in a defined clinical role. They see 7% of allergy referrals in the UK and have been instrumental in developing new models of care.[19,22] In light of this, work has been undertaken to describe the core competencies required by GPs to provide allergy care and those which might be needed to provide a specialized level in primary care.[20]

The aim of this survey was to explore the specific educational needs of a cohort of European GPs with regards to allergy training so that future educational initiatives may better support the delivery of allergy services in primary care.

2 | METHODS

An electronic questionnaire was developed by the EAACI-WGPC (Working Group on Primary Care) in collaboration with the EAACI Marketing and Communications Department (A completed example attached as Appendix S1). Questionnaire development was based on empirical evidence and expert opinion. The layout and accessibility of the different language versions of the questionnaires were centralized by this EAACI Department.

A structured questionnaire, administered through Survey Monkey (demographic parameters, professional qualification, type of employment, level of confidence regarding competencies for diagnosis and treatment of allergic diseases, referral of patients to allergist and preferred method of learning and assessment), was made available in eight languages (English, Dutch, Italian, Spanish, Greek, Polish, French and German) and distributed to eight different European countries during the period September to November 2019. Prior to dissemination, a pilot study was carried out in Spain (20 April to 5 May 2019) to test the functionality of the survey.

Distribution of the questionnaire to primary care healthcare professionals was enabled through regional GP scientific societies or GP networks. These varied across the different countries. Local participating Societies were emailed with the corresponding survey link, which was made available to PC providers through their local PC societies' websites with the aim of recruiting as many PC providers as possible (including nurses and other allied professions). All national colleges and associations of PC, which appear on the WONCA (World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians, Europe) website, were emailed in a bid to increase exposure (time to respond, reminders, etc).

Thirty surveys per participating country was the cut-off for inclusion and statistical analysis. Frequencies and percentages were calculated. The sample size is reflective of a convenience sample; the recruitment period was from September to November 2019. Participation and survey responses were anonymized. Given that this was a non-interventional study to understand clinician's educational needs, ethics committee approval was not sought. Participant confidentiality was been maintained.

The online questionnaire consisted of 18 items and an open field to include any additional comments, covering 6 domains (participant and practice demographic data, type of employment/practice, level of confidence (knowledge/skills), factors influencing referral/lack of referral to allergy specialist, access to allergen immunotherapy and preferred methods of learning) (Appendix S1). Responders were asked to rate their confidence across several different areas of allergic disease management on a scale of 1 to 5, where 1 was no confidence and 5 was very confident. The investigators then classified a score of 4 or 5 to the label 'confident' and scores 1, 2 or 3 to the label 'not confident', in order to aid analysis and facilitate interpretation.

2.1 | Statistical analysis

Descriptive analysis was carried out, and summary statistics were produced (mean, standard deviation (SD), median and interquartile range (IQR; 25th and 75th percentiles) for the continuous variables, and counts and percentages for the categorical variables, respectively). Crosstabs relationship for a limited number of variables related to education was performed using chi^2 test (level of confidence 95%) (learning and assessment method preference and age; education, learning and assessment preference and country).

3 | RESULTS

The e-questionnaire was successfully distributed to the targeted eight countries. The countries from which a minimum of 30 responses were received were UK $n = 348$, Spain $n = 133$, The Netherlands $n = 57$, Poland $n = 69$ and Italy $n = 83$, providing 690 responses for analysis. Responses received from allergists ($n = 56$) were not included. Of the responses, 348 were in English and 341 in other languages. Three surveys were excluded based on members pilot study data, leaving a total number of 687 evaluable surveys in total. Table 1 summarizes the overall characteristics of responders.

The majority of responders (54.2%) were aged between 35 and 54 years age ranges: 70.1% were female and 99.3% were working within Europe. The most common area of practice was 'Primary Care Clinician' (67.9%, $n = 468$). Most responders (68.2%, $n = 470$) worked in a state or district health service, 11.2% ($n = 77$) in private practice, 2.0% ($n = 14$) at a university, college and 0.3% (n=20) were retired. A detailed summary of responder demographics is included in Table 1. A full demographic table appears in Appendix S2.

A specialist interest in allergy was reported by 22.5% ($n = 155$) of responders; and of those, 78.0% reported working 0–8 h/week in this field.

A majority of responders (64.7%, $n = 446$) reported seeing between 0 and 10 patients per week whose main complaint was an allergic problem. Seventy per cent (70.3%, $n = 484$) of responders reported that less than half their patients visited a pharmacy exclusively prior to visiting them for their allergy within the previous year.

Overall 18.4% ($n = 127$) of responders reported receiving no education associated with allergy: 48.0% ($n = 331$) and 48.0% ($n = 331$) receiving allergy training as undergraduates and postgraduates,

TABLE 1 Responder characteristics

Characteristic			*n*	%
Age Group (categorized)		18–24	3	0.4
		25–34	127	18.4
		35–44	187	27.1
		45–54	189	27.4
		55–64	151	21.9
		65+	32	4.6
		Total	689	100
Gender		Female	483	70.1
		Male	206	29.1
		Total	689	100
Country of Employment (Europe)		Yes	684	99.3
		No	5	0.7
		Total	689	100
Qualification	GPs Current employment	GPs	468	67.9
		GPs with a special interest	34	4.9
		General medical specialist	31	4.5
	Nurses (current employment)	Primary Care Nurse	16	2.3
		General Nurse	6	0.9
		Allergy Specialist Nurse	11	1.6
	Other	Dietician	28	4.1
		Pharmacist	2	0.3
Further specialist qualification		MD	565	82
		Nursing diploma	56	8.1
		Pharmacist	4	0.6
		Other	62	9
Language		English	348	50.5
		Other (List of the four more language versions)	341	49.5
		Total	689	100
GPs main employer		State or District Health System	470	75.6
		Private	77	12.4
		University, collage or equivalent	14	2.3
		Retired	2	0.3
		Other	59	9.4

respectively. This varied greatly between different countries, with the highest proportion of responders receiving training in The Netherlands and Poland (Figure 1). There was also a large range in the proportion of responders who were aware of local GP guidelines for referral, with the highest awareness amongst responders in The Netherlands (89.5%) and the lowest amongst those from Italy (24.1%) (Figure 2). A low proportion of responders from all countries were aware of the EAACI competencies for Allergy Health Professionals (AHP) for allergy (range 1.8% in The Netherlands to 13.2% in the UK) (Figure 2). There was a statically significant difference between knowledge of the EAACI competencies document for AHP (Chi^2 $p = .001$, $n = 516$) across the different countries (Appendix S5).

Table 2 summarizes the proportion of responders with 'Adequate' confidence in managing different allergic conditions. Overall responders felt most confident to manage rhinitis/asthma (83.3%) and least confident to manage occupational allergy (23.5%) (Appendix S3). When it came to confidence in understanding the basic management principles underpinning the treatment of allergic rhinitis, anywhere between 47.3% and 83.8% of responders did not feel adequately confident in understanding sensitization,

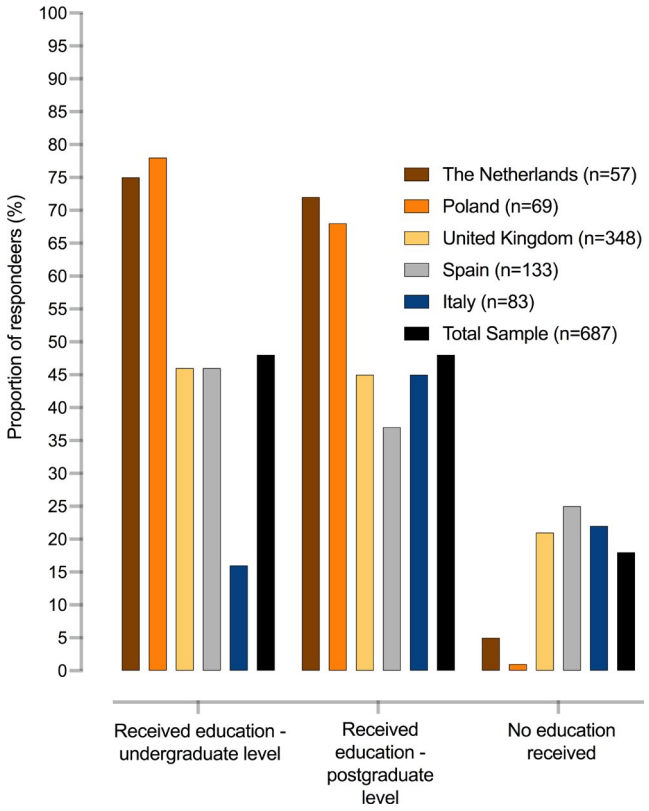

FIGURE 1 Proportion of responders and allergy-related education received

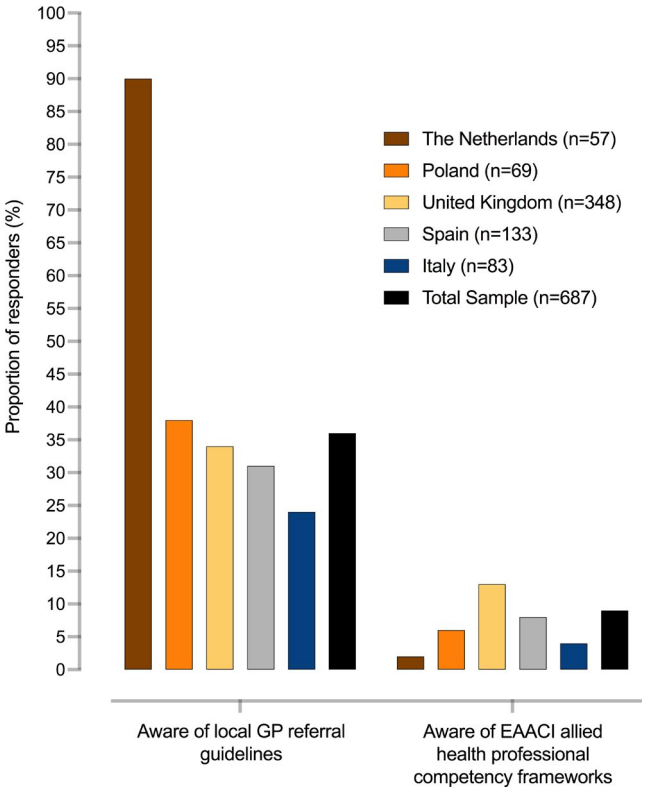

FIGURE 2 Proportion of responders' aware of local general practitioner (GP) referral guidelines and EAACI competencies framewor

TABLE 2 Self-perceived knowledge levels of confidence and educational needs

	Reported confidence				UK $n = 241$	Spain $n = 104$	The Netherlands $n = 52$	Poland $n = 41$	Italy $n = 75$
Condition	*n*	Median (IQR)	Adequate %	Inadequate %	Median (IQR)				
Rhinitis/Asthma	532	4 (4.5)	83.3	16.7	4 (4.5)	4 (4.5)	4 (4.5)	4 (4.5)	4 (3.5)
Eczema/atopic dermatitis	530	4 (3.5)	66.4	33.6	4 (3.5)	4 (3.5)	4 (4.5)	4 (3.4)	4 (3.5)
Anaphylaxis	503	4 (4.5)	78.7	21.3	5 (4.5)	4 (4.5)	4 (4.5)	4 (4.5)	3 (2.5)
Contact dermatitis	528	4 (3.4)	61.2	38.8	4 (3.4)	4 (3.4)	4 (3.4)	3 (3.4)	4 (3.5)
Drug reaction/allergy	525	3 (3.4)	43.4	56.6	3 (2.4)	3 (3.4)	3 (3.4)	3 (3.4)	3.5 (2.5)
Urticaria/Angioedema	531	4 (3.5)	68.5	31.5	4 (3.5)	4 (3.5)	4 (4.5)	4 (4.4)	4 (3.5)
Food allergy	538	3 (3.4)	40.7	59.3	3 (3.4)	3 (3.4)	3 (2.4)	3 (3.4)	3 (3.4)
Latex allergy	502	3 (2.4)	32.9	67.1	3 (2.4)	3 (2.4)	3 (3.4)	3 (2.3)	3 (2.4)
Occupational allergy	490	3 (2.3)	23.5	76.5	3 (2.3)	3 (2.3)	3 (3.3)	3 (2.4)	3 (1.4)
Venom Allergy	453	3 (2.4)	37.3	62.7	2 (1.4)	3 (2.4)	4 (3.4)	4 (3.4)	3 (2.4)

Note: Perceived confidence levels of 4 or 5 were categorized as 'Adequate'; 1, 2 or 3 was categorized as 'Inadequate'.

cross-reactivity, basic mechanisms, immunotherapy and environmental control measures (Appendix S3), while 56.2% and 50.0% felt adequately confident to provide advice on risk assessment for anaphylaxis and prescription/training in adrenaline use respectively (Appendix S3). Responders were least confident in managing anaphylaxis, food allergy, drug allergy, latex allergy, occupational allergy and venom allergy.

With regards to referral to an allergist, 43.8% of responders felt confident in identifying patients who need a referral. Figure 3 summarizes the factors influencing the responder's decision to refer to

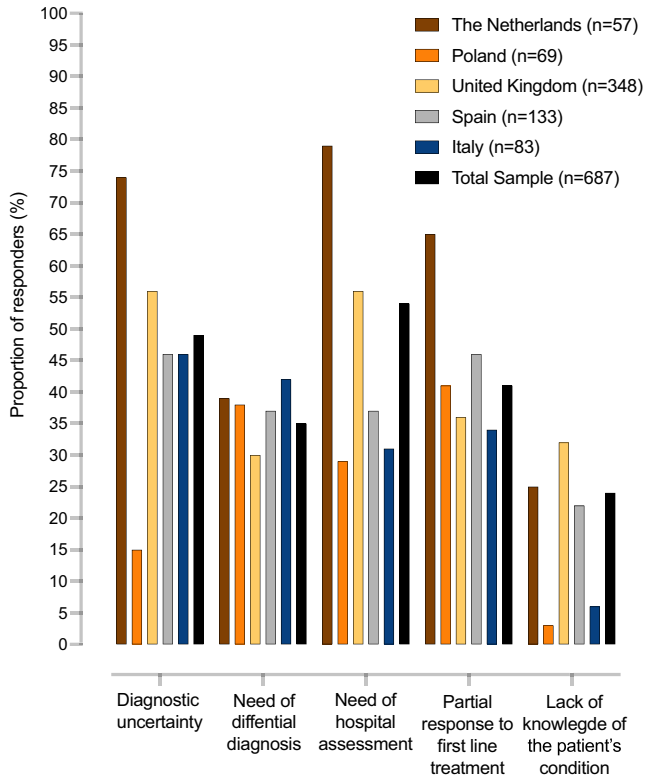

FIGURE 3 Proportion of responders and reasons for referral to an allergist

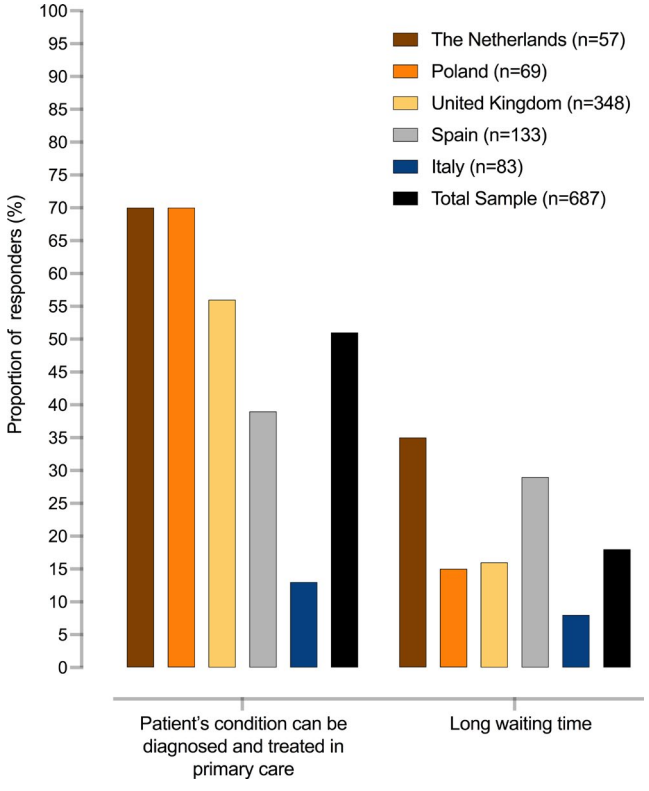

FIGURE 4 Proportion of responders' and reasons not to referring to an allergist

a specialist (Appendix S3). Although the importance of the different factors for referral to an allergist varied from country to country, in all countries the most important factor identified was 'Need for hospital assessment', that is need for specialist assessment (ranging from 29% to 78.9% of responders) and the least influencing factor being 'Lack of knowledge of the patient's condition' (ranging from 2.9% to 32.3%). The greatest barrier to referral was the perception that the patient's condition could be diagnosed and treated in primary care (51.4%) and 15.8% felt there was long waiting time for the specialist. Figure 3 summarizes the difference between countries with regarding to referral. Ten per cent (10.6%) of responders did not refer to an allergist because there was no allergist in the area/health system (Figure 4); 52.6% did not refer as they considered that the patient's condition could be treated in primary care (Figure 4).

There was a statistically significant difference between the different countries with regards to access to fundamental investigations (Chi^2 $p = .000$, $n = 517$) (Figure 5). Thus, specialist referral provided access to investigations. Less than half the responders from the UK, Poland and Italy reported having access to immunotherapy; approximately half in Spain (54.8%) and a majority in the Netherlands (87.7%) (Figure 5). To the item 'there are no allergists in my Area/Health System', the lowest rate was for Spain (0.8%), and the highest for Italy 14.5% (global 10.8% across Europe) (Figure 5).

Learning preferences for responders is summarized in Figure 6. There was a statistically significant difference across the different age groups with regards to a preference for traditional versus e-learning with responders aged 35–54 years old preferring e-learning over traditional learning relative to the young and older aged responders (Chi^2 $p = .004$, $n = 513$) (Table 3). Computers were the preferred platform for learning (Table 3), Appendix S4.

4 | DISCUSSION

The aim of this multi-national cross-sectional survey was to explore the specific educational needs of a cohort of European GPs with regards to allergy training. It was identified that there continues to be unmet need for primary care (PC) providers to be upskilled in the management of allergy across all aspects of allergy management, from education to reasons for referral to an allergist.

Firstly with regards to fundamental training at the undergraduate and postgraduate level, less than half the responders reported receiving allergy education at undergraduate level and almost 1 in 5 had not received any training on allergic disease at either undergraduate or postgraduate level. This is clearly unacceptable given the high prevalence of allergic disease and the complexity of the field of medicine as well as the subsequent high exposure of not only medical PC providers, but also allied healthcare providers, to patient with allergy. PC providers are increasingly required to be involved in allergy care and prevention, helping to ensure optimal care and provide needed reassurance, personalized education and ongoing therapeutic support in order to help patients of all ages to balance

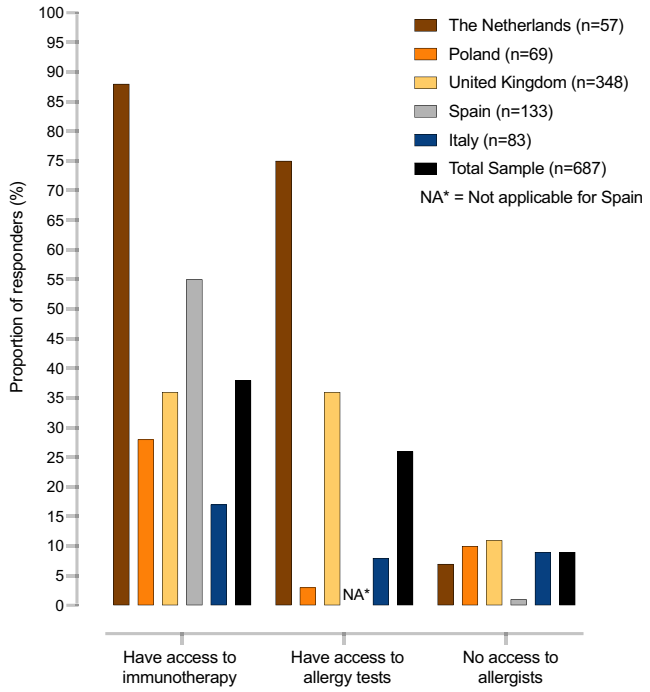

FIGURE 5 Proportion of responders with access to allergy management resources

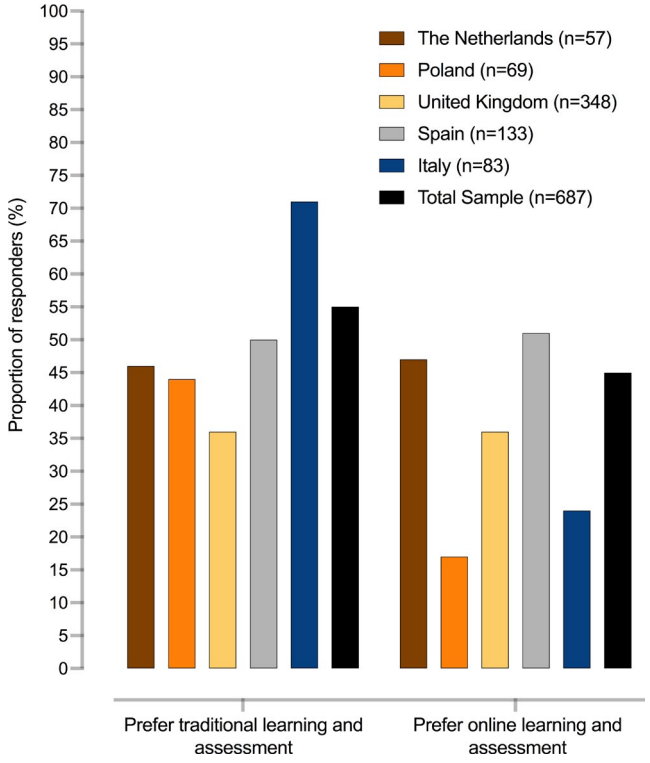

FIGURE 6 Proportion of responders' learning and assessment preference (country names identified by colours)

TABLE 3 Preferred methods of learning and assessment

Age	Preference ratio (Traditional: e-learning)	E-platform by order of preference
18–24	100:0	Smartphone =Table = computer
25–34	59:41	Computer > Smartphone > Table
35–44	48:52	Computer > Smartphone > Table
45–54	48:52	Computer > Tablet > Smartphone
55–64	66:34	Computer > Tablet > Smartphone
+65	73:27	Computer > Tablet > Smartphone
TOTAL	55:45	Computer > Tablet > Smartphone

safety with normal living. It is therefore important to ensure that all patients and families living with an allergy have access to a PC providers, across the healthcare disciplines including nurses, dietitians, psychologists, pharmacists and other important AHP, so that holistic care can be provided and that referrals to both GPs and allergist can be appropriately supported. The need for an integrated approach has been recognized,[21,23] and with core competencies for primary care providers already having been proposed,[20,21] the next step would be for a global blueprint for allergy education for PC providers from undergraduate to continuing professional education levels to be developed.

This need for education is further reflected in the confidence levels reported by responders across the different countries. Overall, while the confidence level in different countries and across the different allergic conditions varied, overall confidence levels were low. Consistent with previous literature,[14] the overall confidence level of management of allergic conditions such as rhinitis/asthma, eczema/atopic dermatitis/anaphylaxis, anaphylaxis and urticaria/angioedema was higher than for other allergic conditions. While we were not able to determine whether this confidence was well founded, that is we cannot determine whether confidence is reflective of competence, it would appear there still remains a gap between how allergic conditions are being managed in real life. Just taking the example of allergic rhinitis, which was reported to be managed with 'adequate' confidence by responders, in real life about only 15% of people with allergic rhinitis are optimally treated[24] and over 50% of people with asthma live with poorly controlled allergic rhinitis[25] supporting the need for education across all allergic conditions and related comorbidities.

A very low number of responders were aware of EAACI competency guidelines, highlighting the need for improved dissemination of global strategies and frameworks specifically to penetrate PC colleges, organizations and networks and to identify and develop PC leaders and champions for allergy. When it comes to the possible mechanisms to enable this, both traditional and e-learning methods were preferred across different age groups. However, e-learning may be the most feasible solution, from the perspectives of logistics, accessibility and acceptability especially more recently with the constraints of the pandemic. Many societies and education and conference providers have now developed user friendly platforms that can support this. Over half the study participants,

slightly preferred e-learning to traditional methods, while categorization of preferred learning methods across different ages groups indicated that there was only an overwhelming preference for traditional learning techniques in a very small of responders, that is >65 years of age and a moderate preference in the 55–64 years old, who together made up about one quarter of the sample. While these results may reflect the study sample, it is important to recognize that this sample was already a group of individuals who are willing to engage in online platforms, thereby participated in this online survey. Further, when divided by country, there is marked difference in the way in which PC professionals from different countries preferred to receive education (for example, in Spain half the participants reported a preference for e-learning whereas in Poland less than 1 in 5 preferred this method). It should be noted that this survey was performed before epidemic COVID-19 and applies to question and replies relating to e-Learning and online assessment. This may have impacted the result with regards to preferred platforms of learning.

Another important aspect of this study is related to the process of referral to specialists. Most responders were not aware of local country guidelines for referral, and therefore, it is perhaps not surprising that the majority of respondents in that study expressed a great lack of confidence in identifying patients needing referral, and this was more apparent for allergen immunotherapy, suggesting even greater lack of familiarity/access to this treatment, consistent with precious findings.[26,27] Despite this lack of confidence, the main reason for not referring was because responders felt that the patient could be managed in primary care; followed by the lack of access to allergists. The latter is a major problem in some countries, where referral to an allergist can take beyond 6 weeks.[1] In contrast, the main reason for referral was due to the need for allergist confirmation of condition and management or because of recognized lack of knowledge. There seems to be somewhat of a tension between the responses to different aspects of referral once again highlighting the need for better education and support for PC professionals in their decision-making around allergy. Failure to have this critical need fulfilled is reflected in inappropriate referral levels to specialist clinics.[27] Developing a cohort of GPwSIs, particularly in countries where there is a deficit of allergists, may offer a solution whereby shared care protocols for continuation of therapy commenced by specialists in general practice may be used.

We observed several differences of note across countries, and this is most likely reflective of the different healthcare systems. This is exemplified in the access to different allergy investigations and immunotherapy across the different countries. This has previously been identified.[28,29] For example, in Italy, one of the European countries with the highest counts of allergists,[30] few GPs initiated or administered immunotherapy because the majority of immunotherapy was prescribed/administer when the patient is under the care of an allergist or being treated in a specialist unit. Very few GPs in the UK initiate immunotherapy, and the same pertains to Spain and Netherlands. Another difference was noticed in confidence levels reported and noted earlier, with higher confidence being reported amongst Dutch PC professionals, followed by those in Poland. PC providers in The Netherlands also reported far greater access to allergy tests, immunotherapy coupled with high access to allergists, suggesting that in The Netherlands, allergy is treated in PC to a far greater extent than in other countries, consistent with PC professionals in The Netherlands having greater awareness of national primary care food hypersensitivity guidelines.[31] The possible explanations for this are complex and can only be hypothesized at this point, but it is possible that overall, there is a more concerted approach to supporting PC providers as the custodians of both acute and chronic illnesses in The Netherlands, and this includes the management of allergic conditions. Overall, it does appear that they are more involved themselves in the evolution of pathways and guidelines. Shared care models for allergy immunotherapy have been successful in Finland where primary care workers spend time in specialist units then form 'hub and spoke 'models with specialist units.

In considering the implications of these results, it is important to consider the limitations, the study population and the timing of this research. It is possible that this group of PC providers is bias towards those with and interest in allergy and those who are willing to engage with online platforms. In addition, about one fifth actually said they had a special interest in allergy and over half saw fewer than 10 patients with allergy per week, with one fifth seeing up to 25 per week; we can not verify the representative nature of these experiences. There was an uneven distribution of PC professionals from the different countries, probably as a failure of awareness of the study amongst those who were not interested in allergy or respiratory disease; it was not possible to continue to recruit until equal representation from each country was achieved. In order to address the implications of these results, we have attempted to identify and report on outliers amongst the different countries. Further We recognize that, had this study been conducted post COVID-19 that we may have obtained different responses.

In conclusion, there are several clear messages that come out of this research.

4.1 | Key findings

1. There is inadequate allergy training of PC providers at the undergraduate and postgraduate level.
2. There is an overall lack in PC provider confidence in management of certain allergic conditions, understanding the basic principles underpinning key allergy process and in providing advice relating to anaphylaxis and adrenaline use.
3. There is variability across different European countries with regards to many aspects of allergy training, confidence and management.
4. While there is some awareness of local allergy guidelines for PC providers, there is minimal awareness of EAACI guidelines across all countries.

4.2 | Recommendations

1. Even though the confidence level primary care providers in some areas of allergic disease management is high, the management of allergic diseases in primary care is suboptimal; therefore, strategies/educational opportunities and tools to support primary healthcare providers across the spectrum of allergic diseases management should be developed.
2. Specific guidelines for the management of allergic conditions by PC providers need to be developed and disseminated across the different PC provider groups, including allied healthcare providers.
3. Any guidelines for PC providers need to be developed under the assumption that many PC providers will not have received allergy training or are lacking in adequate confidence to treat the full spectrum of allergic conditions.
4. Any guidelines pertaining to primary care need to include representatives of primary care who have better knowledge of care barriers than many of their specialist colleagues.
5. A country-specific approach is the key to the dissemination of allergy guidelines for PC providers.
6. EAACI needs to work with National Societies to instil the need to utilize any globally developed guidelines for PC providers and for them to be incorporated into undergraduate curricula across Europe as a minimum standard of health education.
7. Service development should include increased clinical provision coupled with research to identify optimum means of providing effective and cost-effective approaches to managing allergic diseases in PC settings, including upskilling of GPs and use of telemedicine for screening/risk stratification running by a GP with a specialist with an interest in allergy, linked to a regional allergy service for specific queries.
8. Short courses and practical training in allergy units for example in skin prick testing and immunotherapy could be considered to gain the necessary skills to then evolve into hub and spoke models with agreed quality standards of care across care settings.
9. EAACI or another provider could consider a bespoke examination and certificate of competence for primary care which would be based on theoretical knowledge and include a practical course which could be at local allergy centres thus improving relationships locally and there could be a register or map of interested primary care workers referring into and supporting specialist units.
10. At this time, it is critical that EAACI take leadership in supporting the role of primary care providers in the management of allergic diseases. This involves not only the establishment of training frameworks, competency standards and practice-based tools, but the development of care pathways which support primary care providers, across the spectrum of professions to better identify, triage and refer patients with allergic disease to appropriate care.

5 | CONCLUSIONS

The management of allergic conditions in primary care is complex, and while important role of primary care is recognized at the highest of levels, GPs lack confidence in the full breadth of allergic disease management. Training in allergic diseases at undergraduate and postgraduate levels needs to be provided. Given the rapidly changing face of allergic diseases, this survey has enabled us to identify what the educational priorities of GPs are and how they would like to have them met. In the post-COVID era, many aspects of education are now being delivered and designed on online interactive platforms, and this medium lends itself well to primary care workers. If, as has been acknowledged, the time to address the significant gaps in the management of allergic conditions is now critical, and the solutions must involve primary care providers, who are currently unsupported and sub-optimally equipped to address these challenges.[28] A strategy for primary care providers in the management of allergic conditions is needed now.

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CONFLICT OF INTEREST

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

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