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Research Article

Doctors, Nurses, Pharmacists, Midwives, Support Workers and Students Lack Confidence in Vaccine Advocacy: Policy Messages from a Pan-European Analysis

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Abstract

Waning confidence in vaccines challenges immunisation programmes globally. The current article reports on a unique dataset of 3,298 individual health professional survey responses, from 34 European countries, as part of the EU project IMMUNION (Improving IMMunisation cooperation in the European UNION). An online questionnaire survey was developed by the Coalition for Vaccination based on the existing Vaccine Training Barometer developed under the framework of the EU Joint Action on Vaccination. The survey ran between 7 June and 4 July 2021. Only 54% of respondents indicated clear confidence in answering questions about vaccines. Over half of respondents (53%) noted that over the past year there were questions about the COVID-19 vaccines which they could not answer. Only 13% of respondents used the websites of international health agencies, such as the ECDC and WHO, to search for information. There is a clear need for additional training on several aspects of vaccination for healthcare professionals in Europe. Further research is needed to understand the missing link between the efforts of international health agencies to develop information materials and their use by health professionals.

Keywords: *Doctors; Nurses; Pharmacists; Midwives; Support Workers; Students; Vaccine Advocacy*

Introduction

Waning confidence in vaccines has been challenging immunisation programmes globally [1,2], leading the World Health Organisation (WHO) in 2019 to identify vaccine hesitancy as a top threat to global health [3]. The largest study of global vaccine confidence, representing 149 countries and almost 300,000 individuals, revealed significant variation across countries including within the European Union

(EU), which overall scored lower compared with other regions [4]. The purpose of the current article is to report on original findings from a unique dataset of 3,298 individual health professional survey responses, from 34 European countries, as part of the EU project IMMUNION (Improving IMMunisation cooperation in the European UNION), which seeks to promote cooperation and vaccine advocacy in the EU.

Background

Increased vaccine uptake has long been known to be associated with trust in healthcare professionals, increasingly challenged by the viral spread of misinformation across social media. In many societies health professionals can occupy the space between vaccine experts, such as immunologists, and the wider public. Despite the central role that health professionals play in promoting vaccine uptake, in-depth research on their anxieties and information needs remains scarce. A notable exception is a study from Alberta, Canada, which identified anxieties among health professionals when asked details about specific vaccines [5]. Here, while health professionals generally spoke positively about the importance and benefits of vaccination, they were also concerned about aspects of vaccines over which they lacked detailed knowledge. Inadequate knowledge has also been identified as a barrier to vaccine advocacy by descriptive surveys in different countries, with health professionals desiring further support in this regard [6-10].

Research on health professional vaccine advocacy, anxieties and information needs specifically within the context of the COVID-19 pandemic remains limited, especially in the EU. However, EU health professional organisations have been acutely aware for a number of years of the pressures faced by frontline workers in particular related to vaccine advocacy and growing public concern, anxiety and uncertainty about vaccine safety and effectiveness [11]. In response, the European Commission convened in 2019 the 'Coalition for Vaccination' based on the 2018 Council recommendation on strengthened cooperation in the EU against vaccine-preventable diseases [12]. The Coalition brings together European associations of health professionals and students with the aim to support the delivery of accurate information to the public, combating myths around vaccines and vaccination, and exchanging best practices on vaccination [13]. The group is co-chaired by the European Federation of Nurses Associations (EFN), the Pharmaceutical Group of the European Union (PGEU), and the Standing Committee of European Doctors (CPME). It is supported by and collaborates with the EU project IMMUNION, which is a 2-year project (2021 - 2023) co-funded by the European Union Health Programme, in the ultimate goal of increasing vaccine confidence and uptake [13]. In the summer of 2021, IMMUNION conducted a pan-European survey among healthcare professionals concerning their views and needs regarding vaccine information, knowledge, and training. The current article presents a high-level summary of original findings from this unique dataset; the final project report is available on the Coalition website.

Methods

The online questionnaire survey instrument was drafted by the Coalition for Vaccination co-chairs and based on the existing Vaccine Training Barometer developed by the University of Antwerp under the framework of the EU Joint Action on Vaccination [14]. The draft survey items were circulated among IMMUNION partners for face validity, and pilot tested for comprehension and user-friendliness.

They survey was administered using Qualtrics and translated in all EU languages using its automatic machine translation function. The link to the online survey was shared with the Coalition and IMMUNION partners to disseminate to their networks and member organisations. The survey ran between 7 June and 4 July 2021.

Analysis of nominal and ordinal data was completed via the Qualtrics reporting tool, using descriptive and summary statistics including counts, range and percentages. Textual data from the open questions underwent a standard process of thematic synthesis, which included grouping responses to common themes.

Results

The survey achieved 3,298 responses from 34 countries (Table 1). The majority of respondents (Table 2) self-identified as physicians (44%), nurses (24%) and pharmacists (23%). The majority of respondents under the 'Other' category were health professions students

and healthcare support workers. The higher response from Greece and Romania is attributed to the active dissemination by IMMUNION partners in these countries. It is worth pointing out representation from both EU and non-EU counties, such as Iceland, North Macedonia, Norway, Serbia, Switzerland, Turkey, and the United Kingdom.

Table 3 and figure 1 show the key findings from the online survey. The majority of respondents (54%) indicated clear confidence in answering questions about vaccines, with the remaining 46% responding as sometimes confident or not confident at all. Crosstabulation (Table 3) points to the most confident profession being nurses and the least confident being midwives.

Country	Number (%)	Country	Number (%)
Austria	152 (4.6%)	Lithuania	3 (0.09%)
Belgium	32 (0.97%)	Luxembourg	2 (0.06%)
Bulgaria	2 (0.06%)	Malta	90 (2.7%)
Croatia	20 (0.61%)	Netherlands	11 (0.33%)
Cyprus	2 (0.06%)	North Macedonia	4 (0.12%)
Czechia	4 (0.12%)	Norway	9 (0.27%)
Denmark	3 (0.09%)	Poland	11 (0.33%)
Estonia	17 (0.52%)	Portugal	204 (6.2%)
Finland	13 (0.39%)	Romania	1281 (38.8%)
France	96 (2.9%)	Serbia	8 (0.25%)
Germany	32 (0.97%)	Slovakia	7 (0.21%)
Greece	941 (28.5%)	Slovenia	1 (0.03%)
Hungary	1 (0.03%)	Spain	9 (0.27%)
Iceland	48 (1.46%)	Sweden	5 (0.15%)
Ireland	96 (2.9%)	Switzerland	8 (0.24%)
Italy	55 (1.7%)	Turkey	4 (0.12%)
Latvia	86 (2.6%)	United Kingdom	8 (0.24%)
Other	33 (1.0%)	Total	3298

Table 1: *Country of respondents.*

Profession	Number (%)
Physician	1451 (44%)
Nurse	796 (24.14%)
Pharmacist	750 (22.80%)
Other	206 (6.25%)
Midwife	39 (1.18%)
Dentist	54 (1.64%)
Total	3298

Table 2: *Profession of respondents.*

In general, do you feel confident responding to patients' questions about vaccines? %				
	No	Sometimes	Most times	Yes
Dentist	4%	5%	34%	48%
Midwife	13%	10%	38%	33%
Nurse	2%	10%	28%	58%
Pharmacist	3%	8%	41%	45%
Physician	3%	3%	38%	54%

Table 3: *Confidence by profession.*

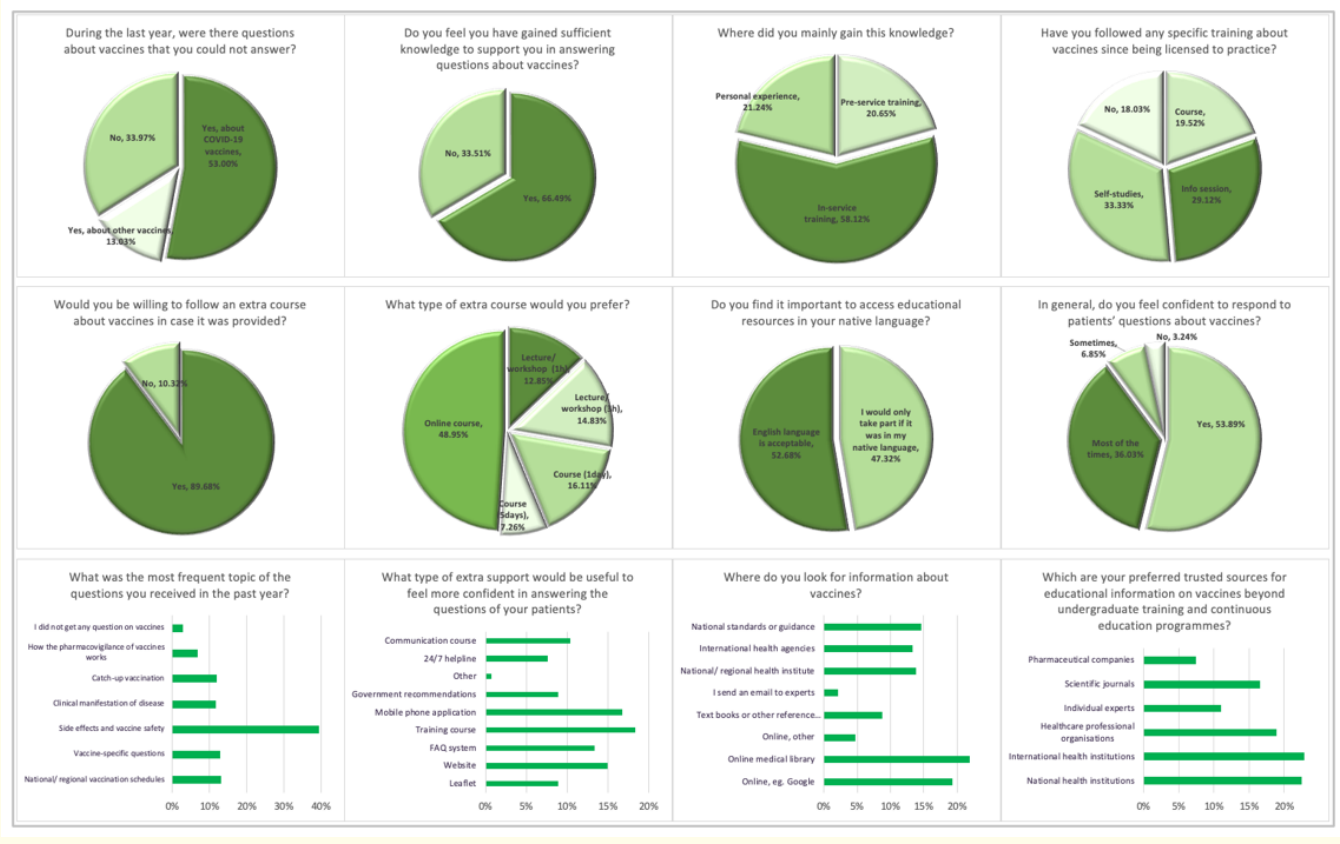

Figure 1: *Survey results.*

Over half of respondents (53%) noted that over the past year there were questions about the COVID-19 vaccines which they could not answer; with another 13% noting they were unable to answer questions about other vaccines. Common aspects of vaccines that challenged professionals were related to safety, side effects, effectiveness, and working mechanisms. Other challenging questions concerned the composition of vaccines, their use in special populations (e.g. pregnant or immunocompromised patients), vaccination schedules, dosage schedule, duration of protection, herd immunity, and the functioning of the immune system.

Additional education via in-service training was the main way through which respondents felt they gained sufficient to answer questions about vaccines (66.5%). Worryingly, the remaining third (35.5%) of respondents indicated that they did not have sufficient knowledge to answer vaccine questions confidently. To meet their knowledge needs, health professionals indicated that they sought additional information through self-study (33%), info sessions (29%), and courses (20%). Just under a fifth (20%) indicated that they did not follow any specific course. Encouragingly, the majority of respondents (89%) indicated that they would be willing to follow an extra course on vaccines should it be provided; almost half of which (49%) stated a preference for an online course.

The most frequent area of questions for the respondents in the past year, excluding COVID-19 vaccines, centred around side effects and vaccine safety (39%). This was followed by questions on national and regional vaccination schedules (13%), vaccine specific questions (13%), catch-up vaccination (12%) and clinical manifestation of diseases (12%).

Health professionals used a variety of sources to look for information on vaccines. The majority of respondents (22%) preferred online medical libraries (e.g. PubMed) and standard medical platforms, while 19% opted for internet search engines such as Google. Moreover, 15% indicated looking at national or regional professional standards or guidance, 14% at national or regional health institutes, and 13% looking at international health agencies or authorities (such as ECDC, WHO).

To the question about what kinds of extra support professionals would find useful to feel more confident in answering questions about vaccines, the majority (18%) indicated a training course, closely followed by a mobile phone application (17%), and a website (15%). Additional kinds of support suggested through open comments included integration of vaccine education in undergraduate training, increased public voice of pharmaceutical companies in helping to debunk common myths, and an online forum to discuss with other health professional colleagues.

Healthcare professionals were asked to rate the importance of topics they considered important when accessing online training materials. Respondents considered side effects, vaccine safety and pharmacovigilance as the most important topics to be addressed. They also considered that online training materials should highlight the benefits and effectiveness of vaccines, as well as mode of action, vaccine-specific considerations (e.g. contra-indications and interchangeability of vaccines), type of vaccines (e.g. inactivated, live-attenuated, mRNA, viral vector, etc.), how to address vaccine hesitancy (including the most common myths and concerns on vaccines), vaccination schedules, immunology, and communication techniques. Interestingly, the long-term effects of vaccines were commonly mentioned as an additional topic.

The most important educational format for online vaccination training platforms were noted to be explanatory videos. Respondents also placed importance on summarised text information (e.g. fact sheets, short articles), scientific publications, frequently asked questions (FAQ) pages, webinars and recorded lectures, live online courses, and infographics and visuals. Podcasts and interactive learning tools (e.g. quizzes or exercises) were seen as the least favourable formats. Several respondents commented that they saw a need for a format in which they would be able to ask questions directly. More than half (53%) of the survey participants responded that accessing educational resources written in the English language would be acceptable. However, 47% of the respondents answered that they would only access the educational resources if they were written in their own native language.

Finally, respondents were invited to offer additional suggestions or comments regarding the design and/or content of an online training platform for healthcare professionals. Suggestions included ensuring the accessibility and sustainability of a training platform beyond the IMMUNION project end date; making the new platform known and easy to search and find; making the platform interactive and easy to use; keeping the information accurate and up to date; and, raising awareness about the platform among healthcare students. Moreover, it was suggested that the materials should be simplified as much as possible, and the terminology should be explained (e.g. via a glossary). They also cautioned that automatic machine translations should not be used for the development of educational materials.

Discussion

A key finding of this pan-European survey was that many healthcare professionals lacked confidence to answer their patients' questions about vaccinations, especially in relation to the COVID-19 vaccines. It is notable that one third of the respondents answered that they did not have sufficient knowledge to support themselves in answering questions about vaccines.

Based on the survey results, increasing confidence among health professionals would appear to be an area of priority. The survey showed that the majority of healthcare professionals would be willing to follow extra courses on vaccines if they were provided, preferably in an online format. Also, a mobile application or a website dedicated to the topic were favourable solutions. To be helpful, such platforms should contain educational materials such as explanatory videos, fact sheets, short articles, scientific publications, frequently asked questions (FAQ) pages, webinars, and recorded lectures. The respondents highlighted that the materials should be easy to find and to navigate.

A striking finding is that only 13% of respondents reported that they used the websites of international health agencies, such as the ECDC and WHO, to search for information. Further research is needed to understand the missing link between the efforts of these agencies to develop information materials and their use by health professionals. It is also notable that there exist disparities in confidence among health professions, with midwives for example being up to four times less confident that the other professions.

The most difficult questions for healthcare professionals to answer related to vaccine safety, side effects, effectiveness, and working mechanisms. In addition to these areas of clear need for additional training, respondents indicated that other areas would be on advice for how to address vaccine hesitancy, as well as communication techniques with patients and parents. The language of training materials appears to be rather important, with almost half of respondents indicating that they would access resources only if these were available in their own native language.

Limitations of the Study

Like all surveys the current one also has some limitations. The survey was responded to by 3298 healthcare professionals from all the EU member states and other European countries. However, a high share of responses was recorded in Greece and Romania. There was a good balance between different healthcare professionals among the respondents. The majority of responses were given by doctors, nurses and pharmacists; midwives, dentists, support workers and healthcare professional students were also represented but in smaller numbers. Overall, responses across the different healthcare professions did not show any notable differences.

Conclusion

There is a clear need for additional training on several aspects of vaccination for healthcare professionals in Europe, with many lacking confidence to respond to their patients' questions about vaccinations. Healthcare professionals use various sources to look for information on vaccines, among which sources provided by healthcare professional organisations being the most preferred and trusted. As the Coalition for Vaccination brings together European associations of healthcare professionals, the new Coalition website has potential to reach the different healthcare professionals and help increase their knowledge, confidence and ability to engage with questions about vaccination.

Declaration of Interests

AX is an employee of King's College London and in receipt of research funds from the NIHR. PDR is an employee, and EA the president of the EFN. AM and AG are employees of the EHN. MK is an employee of the CPME. JDB and IP are employees of the PGEU. EFN, EHN, CPME, PGEU are in receipt of research funds from the EC.

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contains. Coalition Website: https://coalitionforvaccination.com/about/coalition-for-vaccination | IMMUNION partners: https://coalitionforvaccination.com/about/immunion

Authors' Contributions

Authors contributed equally to the following:

Conceptualisation: PdR, EA, AM, AG, MK, JdB, IP

Data curation: AG, AM, MK, JdB, PdR

Analysis: AM, MK, JdB, PdR, AX

Writing: AX, PdR, EA, AM, AG, MK, JdB, IP

Review and Editing: AX, PdR, EA, AM, AG, MK, JdB, IP

AX with PdR verified the academic integrity of the dataset.

Bibliography

1. Larson HJ., *et al*. "Understanding vaccine hesitancy around vaccines and vaccination from a global perspective: a systematic review of published literature, 2007-2012". *Vaccine* 32 (2014): 2150-2159.
2. Omer SB., *et al*. "Vaccine refusal, mandatory immunization, and the risks of vaccinepreventable diseases". *The New England Journal of Medicine* 360 (2009): 1981-1988.
3. WHO. Ten threats to global health in (2019).
4. De Figueiredo A., *et al*. "Mapping global trends in vaccine confidence and investigating barriers to vaccine uptake: a large-scale retrospective temporal modelling study". *The Lancet* 396.10255 (2020): 898-908.
5. Manca T. "One of the greatest medical success stories:" Physicians and nurses' small stories about vaccine knowledge and anxieties". *Social Science and Medicine* 196 (2018): 182-189.
6. Dubé E., *et al*. "Vaccination Against Influenza in Pregnancy: A Survey of Canadian Maternity Care Providers". *Journal of Obstetrics and Gynaecology Canada* 41 (2019): 479-488.
7. AbiJaoude J., *et al*. "Factors Associated with Human Papilloma Virus (HPV) Vaccine Recommendation by Physicians in Lebanon, a Cross-Sectional Study". *Vaccine* 36 (2018): 7562-7567.
8. Neufeind J., *et al*. "Barriers and Drivers to Adult Vaccination among Family Physicians-Insights for Tailoring the Immunization Program in Germany". *Vaccine* 38 (2020): 4252-4262.
9. Verger P., *et al*. "Prevalence and Correlates of Vaccine Hesitancy among General Practitioners: A Cross-Sectional Telephone Survey in France". *Eurosurveillance* (2016): 21.
10. Inoue Y and Matsui K. "Physicians' Recommendations to Their Patients Concerning a Novel Pandemic Vaccine: A Cross-Sectional Survey of the 2009 Influenza A/H1N1 Pandemic in Japan". *Environmental Health and Preventive Medicine* 16 (2011): 320-326.
11. EFN. Short Report on Nurses' experiences and insights on Vaccine Hesitancy. Brussels: EFN (2021).
12. Council Recommendation of 7th December 2018 on strengthened cooperation against vaccine-preventable diseases. Official Journal of the European Union (2018): C 466/1.
13. Coalition for Vaccination (2021).
14. EU Joint Action on Vaccination - Vaccine Training Barometer (2021).

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