

# Describing clinical pharmacy education and practice in Europe

Laura Moura, Stephane Steurbaut, Brian Addison, Hege Blix, Sule Apikoglu-Rabus, Vera Gunten, Helder Mota-Filipe, Filipa Alves da Costa.

**Background** Clinical pharmacy (CP) is a discipline of pharmacy practice focusing on optimising rational use of medicines. As clinical activities developed by pharmacists are emerging and increasing, a detailed framework of CP education and practice in European countries is lacking.

**Purpose** To explore and map Clinical Pharmacy education and practice (at undergraduate and postgraduate levels) in Europe, by assessing the current situation using a survey directed at European Society of Clinical Pharmacy (ESCP) members and by exploring publicly available information.

**Method** An online survey was conducted and disseminated among academic and research-oriented ESCP members in November 2018. The survey collected information on the quantity of academic content of CP education offered during undergraduate and postgraduate courses, including continuous professional development (CPD) programs and official recognition of a specialisation in this area. The collected information was validated by independent respondents (August-September 2019) and subsequently made publicly available for consultation through ESCP's website (June-August 2020). Additional information was obtained by searching faculties' websites. Data triangulation was used to achieve consensus. Levels of evidence according to the number of sources used were established.

**Findings** This study includes information of 95% (n=40 in 42) of the European countries delivering education in pharmaceutical sciences. In 95% of the countries (n=37 in 39), CP was part of the undergraduate education. There was a wide variability in the number of semesters, hours, European Credit Transfer System (ECTS) and percentage of practical teaching dedicated to clinical course units. Most countries reported to have specific CP postgraduate education: 65% (n=26 in 40) MSc degrees and 93% (n=37 in 40) PhD programs. 64% of the countries (n=23 in 36) reported to have CP CPD programs and/or courses that do not lead to a degree. More than half (51%; n=21 in 40) of the European countries recognize CP as an area of specialization, and among these, in 47% (n=9 in 19) the specialization goes along with specific job specifications and/or professional rights.

**Conclusion** Major differences have been identified between European countries in terms of CP education and practice. The final report will include examples of good practices in CP that may contribute to influence further expansion in Europe. Future work will expand the research beyond Europe by liaising with International Pharmaceutical Federation.