

INTRODUCTION

- ▶ Pharmacy practice have considerably evolved over the past decades.
- ▶ To be at the right place doing the right things, pharmacy students have to think about the challenges they will face.

OBJECTIVE

- ▶ Assess the perception of European pharmacy students on pharmacy challenges.

METHOD

- ▶ Considering the need to expose students to the challenges they will face, we conducted a workshop at the Congress of the European Association of Students of Pharmacy
- ▶ Following a review of the literature, we have identified 48 challenges that might impact pharmacy practice in the future.
- ▶ A questionnaire was relayed by the organization before the workshop and administered on paper during the workshop.
- ▶ Respondents were asked to rate the possible occurrence of each challenge by 2025 (very likely=1; likely=2; unlikely=3; very unlikely=4). A score was calculated for each statement.
- ▶ Only descriptive statistics were performed.

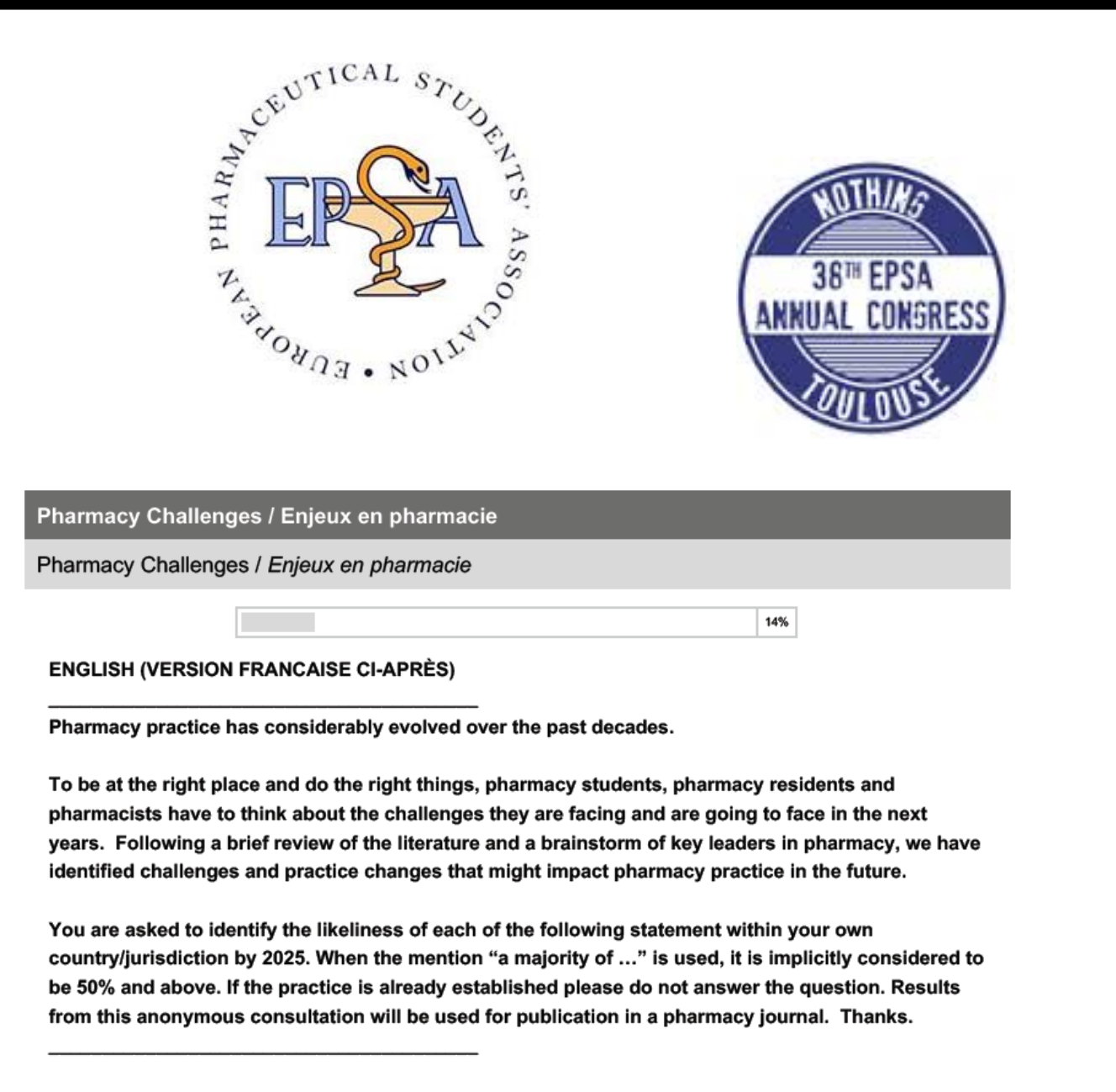


Table 1. Demographic data of respondents

Demographic data	n (%)
Sex	
Female	75/113 (66%)
Male	38/113 (34%)
Graduation	32/112 (29%)
Experience in community (retail) pharmacy	95/113 (84%)
Experience in hospital pharmacy	59/113 (52%)
Median age	23 [18-31] years

115 students participated in the survey

13 different countries: Austria, Belgium, Czech Republic, France, Germany, Ireland, Lithuania, Poland, Romania, Serbia, Slovenia, Spain, UK

Academic challenges

Challenges	Average score (n)
Credentials – Hospital will require pharmacists to have complete a formal post-graduate training to be hired and work within the hospital	1,83 (90)
Professional portfolio - Pharmacists will have to document their continuing education in a web portfolio on the web-site of a regulatory authority	2,15 (94)
Virtual teaching – A majority academic clinical patient cases during undergraduate and post-graduate training will be taught using virtual simulations rather than real patients	2,22 (98)
Academic programs – A majority of the evaluation conducted during an academic pharmacy curriculum will be based not only on knowledge but also abilities and competencies	2,29 (95)
A la carte training – Pharmacists will be required to complete “à la carte” online advanced training to be allowed to perform certain activities	2,31 (97)
Competency evaluation – A majority of pharmacists will be evaluated periodically to assess their competencies	2,49 (95)

General pharmacy challenges

Challenges	Average score (n)
Social medias – A majority of pharmacists will have a presence on the web and be active in blogging	2,07 (86)
Vaccine administration – Pharmacists will be allowed to ADMINISTER independently vaccines	2,12 (85)
Patient compliance – A majority of patients will use Apps on their smart phone to document their compliance of drug therapy and these data will be synchronized with pharmacy information systems for online compliance monitoring	2,19 (86)
Drug prescribing – Pharmacists will be allowed to RENEW independently drug therapy	2,20 (83)
Outcome-based practice – A majority of pharmacy will organize and prioritize their practice based on patient outcomes (i.e. evidence based pharmacy)	2,25 (81)
Drug prescribing – Pharmacists will be allowed to ADJUST independently drug therapy	2,26 (84)
Procurement of medicines – A majority of pharmacists will frequently encounter drug shortages	2,41 (85)
Patient/pharmacist communication – A majority of patients will interact with their pharmacists through emails for questions and follow-up	2,46 (87)
Specialized channels – A majority of new drugs commercialized in a given market will be launched and publicized for professionals and patients on specialized channels to avoid any delays in knowledge transfer	2,75 (80)
Technician regulation – Pharmacy technicians will be regulated by the pharmacy regulatory authority and will have a right to say in the evolution of pharmacy practice	2,77 (82)
Lab prescribing – Pharmacists will be allowed to PRESCRIBE independently labs	2,87 (86)
Patients' use of smartphone – A majority of patients will use their smartphone to register a conversation with a pharmacist to allow quiet listening once at home	2,90 (86)
Drug prescribing – Pharmacists will be allowed to INITIALLY PRESCRIBE independently drug therapy	3,12 (87)
Pharmacogenomics – A majority of patients' genome will be done early in their life and pharmacists will have access to these results to adjust drug therapy based on known polymorphisms to avoid side effects or optimise expected drug effects	3,12 (86)
Patients speak up - Patients will be allowed to blog on Pubmed (like pubmed commons for professionals/authors) and comment published articles	3,22 (85)

Specific community pharmacy challenges

Challenges	Average score (n)
Internet community pharmacy – A majority of patients will buy their outpatient/home medication through internet websites, keeping the option to go the related/affiliated street-based pharmacy	2,32 (81)
Rate your pharmacist – A majority of pharmacists will have been rated by a significant number of patients on “rateyourpharmacist” type of websites	2,54 (85)
Community pharmacy ownership – A majority of community pharmacy will be owned by non pharmacists	2,8 (85)
Reimbursement – A majority of outpatient/home-based drug prescriptions will be reimbursed by third party payers only if they are processed through online pharmacies (i.e. internet pharmacy)	3,43 (85)

Specific hospital pharmacy challenges

Challenges	Average score (n)
Collaborative practices – A majority of hospital pharmacists will work in collaboration with other professionals	1,53 (77)
Drug compounding – A hospital pharmacy department will have to be certified by a national regulatory authority to be allowed to compound drugs for patients within the hospitals	1,71 (66)
Documentation of practices - A majority of hospital pharmacists will document their pharmaceutical plan in the patient file	1,74 (77)
Traceability – A majority of drug doses dispensed will be traceable through barcode used at patients' bedside	1,81 (78)
Robots – A majority of hospital doses dispensed will be prepared through automation	1,90 (79)
Pharmacists' accountability – Hospital pharmacists will be held accountable to evaluate and monitor patients outcome following their activities and interventions	2,05 (79)
Electronic health record features – A majority of patients will get access to advanced features of electronic health record to participate actively to their care	2,06 (80)
Pharmacist/physician communication – A majority of hospital pharmacists will use smart phones to interact with physicians to clarify drug prescriptions and drug related problems	2,13 (79)
Consultation mode – A majority of patients followed by a hospital pharmacist will be identified following a medical consultation request	2,24 (74)
Prioritization – A majority of hospital pharmacists daily workload will be determined by software that will identify/target relevant patients based on a higher probability of drug-related problems	2,26 (77)
Telepharmacy clinical services – A majority of hospital pharmacy department will be equipped or have access to a telepharmacy infrastructure to treat and follow patients at distance	2,28 (79)
Medication errors – A majority of drug errors occurring within a hospital will be reported in a national registry that patients and all stakeholders will be allowed to monitor and consult	2,38 (78)
Telepharmacy drug distribution – A majority of hospital pharmacists will validate drug orders from a distant site	2,45 (76)
Certification – A majority of hospital pharmacy technician will be locally or nationally certified to be allowed to perform tasks including tech-check-teck	2,46 (79)
Teach drug administration – Hospital pharmacists will be allowed to TEACH independently sub-cutaneous administration	2,51 (80)
Traceability – A majority of drug doses compounded by the hospital pharmacy will be traceable through imaging	2,74 (80)
Lawsuits – A majority of hospital pharmacy departments will have been sued by patients for medication errors	2,76 (80)
Pharmacist remuneration – Hospital pharmacists will be paid on the basis of the number of professionals activities performed	2,78 (78)
Pharmacists at the bedside – A majority of hospital pharmacists will spend all their time at patients' bedside or in patient care programs	2,84 (80)
Tech-check-tech – A majority of hospital drug distribution/dispensing activities will be performed by pharmacy technicians and checked independently by another pharmacy technician	2,86 (78)
Pharmacy dispensing – A majority of hospital pharmacy department will operate without any pharmacists but only pharmacy technicians for drug dispensing	2,97 (79)
Clinical pharmacy activities – A majority of clinical pharmacy activities will be performed by clinician nurses (e.g. medication reconciliation)	2,99 (79)
Hospital pharmacy leadership – A majority of hospital pharmacy departments will be managed by non pharmacists	3,37 (81)

- Challenge judged by the students likely by 2025. Average score < 2
- Mixed opinion. 2 < Average score > 3
- Challenge judged by the students unlikely by 2025. Average score > 3

CONCLUSION

- ▶ Pharmacy students are tomorrow's generation and their perceptions of the challenges of this profession seem important to consider meeting the challenges of the profession.