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OP1: Regulatory and educational strategies for reducing the burden associated with prescriptions of sedative-hypnotics

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Introduction: Benzodiazepines, z drugs and first generation histamine H1 antagonists are associated with major adverse events such as falls and cognitive impairment. Despite these considerations, the consumption of sedative-hypnotics remains high in community dwelling patients as well as in hospital where an initiation of sedative-hypnotics is reported for 8.2 to 33 % of inpatients. Our objective is to assess the effectiveness of regulatory and educational interventions designed to reduce the burden associated with sedative-hypnotic prescription.

Material and Methods: We conducted a systematic review of literature. A systematic search was conducted in five databases (Medline, Embase, Web of Science, PsycINFO, CENTRAL) for studies reporting regulatory or educational interventions designed to improve the appropriate use of sedative-hypnotics during the period 1980-2015. Risk of bias was independently assessed by two authors using the Quality Assessment Tool of the Effective Public Health Practice Project.

Results: Among the 10 854 studies retrieved, 31 were eligible for the review. Twelve targeted elderly and 19 the general population. Eight trials assessed regulatory interventions and 23 assessed educational interventions. Positive results were reported in 21 studies both in elderly (ten studies) and in general population (eleven studies). Educational multifaceted interventions involving healthcare professionals and patients and the support of mass media seem to be the most effective strategies. Six studies assessed potentially negative effects of the interventions and three actually observed clinical adverse effects or switches to other non-recommended medication. Risk of bias was weak for four studies, moderate for three studies and high for 24 studies.

Conclusions: Despite a moderate to high risk of bias for most of the included studies, our results are consistent with literature in the field of interventions for healthcare management improvement. They highlight the importance of multifaceted interventions, and prescribers' and patients' adherence to these interventions.

OP2: Postgraduate education of clinical pharmacists as a new challenge for a faculty of pharmacy

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Introduction: Clinical Pharmacy is an important yet undervalued area of pharmacy. In Czech Republic, for every 30 hospital beds there should be on average 0.5 clinical pharmacists in intensive care and 0.1 in after-care - at present, there are virtually none. It is nevertheless indisputable that having a clinical pharmacist in a medical team improves the quality and competence of the treatment and decreases chances of harmful intervention.

Material and Methods: Although the Faculty of Pharmacy, UVPS Brno offers the career path of clinical pharmacist in its Master programme curriculum, the specialisation as defined by law takes place in postgraduate education in two stages, called "basic qualification" and "specialist qualification". In order to ensure the quality of this education, the Faculty of Pharmacy Brno has established an Educational Institute in 2015 aimed at providing courses as part of the accredited postgraduate education programme and taught by top practitioners and experts in the field.

Results: The courses aim to increase the participants' competence in these areas:

- Areas essential for a clinical pharmacist: complex examination, medical consultation, monitoring examination.
- A pharmacist can also take part in simple medical interventions, such as: capillary blood taking, acute care interventions, resuscitation, supportive psychotherapy, working with handicapped patients *etc*.

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Conclusions: There are many issues concerning the specialisation of a clinical pharmacist that have to be dealt with in the country, such as establishing categories for individual medical interventions and their pricing in the National Medical Insurance scheme. However, by taking decisive steps in educating experts in the field, the Faculty has ensured not only the quality of the postgraduate education in Clinical Pharmacy, but also that its voice will be heard in deciding these important issues.

OP3: Evaluating student perception of laboratory practical sessions for clinical skills

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Introduction: First year undergraduate pharmacy students within the Department of Pharmacy of the University of Malta carry out five two-hour laboratory practical sessions on various clinical skills and document activities in a developed workbook. Clinical skills include blood glucose, blood pressure and body mass index (BMI) measurement, urinalysis and administration of intradermal, subcutaneous and intramuscular injections, using point-of-care (POC) diagnostic devices and training simulators. The aim was to evaluate student perception of these practical sessions.

Material and methods: A self-administered evaluation questionnaire consisting of five-point Likert-scale (1 strongly disagree, 5 strongly agree) and open-ended questions was developed and validated. The questionnaire was disseminated to all students (N=21) following the compulsory study unit at the end of the fifth practical session. SPSS® version 22.0 was used for descriptive statistics.

Results: Students strongly agreed that the practical sessions help to develop competence in relevant health and safety precautions when performing clinical skills (n=16), support development of clinical skills (n=15) and provide an opportunity to relate theoretical material with practical aspects (n=11). Students also strongly agreed that tutor demonstration was helpful and instructive (n=16), sufficient time for each practical session was allocated (n=15), the workbook is well-presented (n=14) and user-friendly (n=13), and that adequate POC devices and training simulators which enhance their learning experience were available (n=12). Thirteen students found the practical session on administration of injections most interesting, while 11 students found the BMI measurement practical session the least interesting.

Conclusion: Students rated these practical sessions on clinical skills highly and perceived the sessions on administration of injections as the most interesting. Suggestions for future practical sessions to be included were cholesterol, triglycerides and haemoglobin testing.

OP4: Pharmacist-engineer and pharmacist-entrepreneur: double diploma at the Faculty of Pharmacy of Lyon, France

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Introduction: Since more than twenty years, the Faculty of Pharmacy of Lyon, France set up collaborations with six engineering schools (five in France and one in Canada) and since 2010 with a business school in Lyon. This allows some of our students to do their fifth and sixth year mainly in these schools in order to broaden their education to complementary fields and to acquire a double diploma.

Material and methods: From the second to the fourth year of pharmacy studies, our Faculty prepares students who would like to acquire a double diploma (1) within an engineering school by optional courses in Mathematics and Physics and (2) within the business school by optional courses in Social and Political Sciences. During their fourth year of pharmacy studies, these students prepare a dossier for engineering schools or the business school allowing each school to select the pharmacy students who will acquire a double diploma. During their fifth and sixth year students selected by one of these schools follow the courses of this school and do two six-month traineeships, one in a hospital and another in pharmaceutical or medical device industry. At the same time, they validate their pharmacy studies by a PharmD-thesis.

Results: In the last twenty years, 220 students acquired double diploma "pharmacist-engineer" and in the last two years 15 students acquired double diploma "pharmacist-entrepreneur". The employability of these students is very high: all students immediately find a job as a pharmacist. Most of them (95%) work in pharmaceutical or medical device industry.

Conclusions: Due to the high employability rate, both double diplomas are more and more attractive for our students these last years. Therefore we will continue to support the collaboration with engineering and business schools in order to allow our students to acquire a double diploma within their pharmacy studies.

OP5: The first experience in launching of postgraduate study programme 'Industrial Pharmacy' in Latvia

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Introduction: Until 2015 there was no specific education for industrial pharmacists in Latvia despite the fact that among professionals such training need has never been questioned. Since specialists employed in pharmaceutical industry need knowledge and practical experience in pharmaceutical technology, chemistry, biochemistry, *etc*., the Faculty of Pharmacy of Riga Stradiņš University (RSU) together with the Faculty of Materials Science and Applied Chemistry of Riga Technical University (RTU) created a joint postgraduate study programme 'Industrial Pharmacy' supported by pharmaceutical manufacturers.

Materials and Methods: A working group to develop the standard for the profession of Industrial Pharmacist was created, as well as to define the precise knowledge, skills and competence areas. The working group included representatives of two of the most important pharmaceutical enterprises in Latvia "Grindeks" and "Olainfarm", academics, members of Industrial pharmacists' section of Pharmacists' Society of Latvia, members of the Association of Latvian Chemical and Pharmaceutical Industry. The curriculum of study programme and content of study courses were elaborated based on established professional standard.

Results: Postgraduate study programme 'Industrial Pharmacy' has been implemented in the academic year 2015/2016. The duration of the study programme is one and a half academic years, totalling – 90 European Credit Transfer System (ECTS) Industrial pharmacy professionals are involved in the realisation of study courses 'Formulation', 'Good Manufacturing Practice', and 'Registration of Drugs'. The curriculum contains traineeship (39 ECTS), conducted in Latvian pharmaceutical enterprises. Graduates of the programme will receive the qualification of Industrial Pharmacist.

Conclusions: To meet up-to-date requirements of the pharmaceutical industry, industrial pharmacists should have a strong pharmaceutical background, should be highly-skilled, and able to work in an interdisciplinary team. This study programme is a new challenge for both universities and will enable closer links between academics and the pharmaceutical industry.

OP6: Offer and allocation of students to Master Research Projects within the Master's degree in Drug Research, Development and Innovation of the University of Navarra, Spain

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Introduction: The Master's Degree in Drug Research, Development and Innovation is a 25-year-old programme that aims to prepare students for a professional career in pharmaceutical or related sectors. Each promotion is comprised of 20-30 people of different nationalities and education backgrounds in biomedical sciences.

The first nine months are dedicated to theoretical and practical teaching of the phases of the drug Research, Development and Innovation (R&D&I) process. During the last six months, students are directly allocated to Master Research Projects (MRPs) mainly in basic research fields within the university.

Material and Methods: Since 2013-2014, a pilot study to offer new MRPs has been launched. Departments of biomedical faculties of the University, research hospitals/ centres and pharmaceutical companies have been contacted. The compiled projects were offered to the students who had to rank five projects of their choice. The department/company was allowed to select the best candidate.

Results: Several research/management projects in the Faculty of Pharmacy and Nutrition, Faculty of Sciences, Centre for Applied Medical Research, University Clinic of Navarra and in many national and international pharmaceutical companies have been offered (32 in 2013-2014; 43 in 2014-2015; 40 in 2015-2016).

Based on the drug R&D&I process, the MRPs could be divided in five areas (preclinical research, clinical research, quality, regulatory affairs and research management) and in three types (documentary, experimental-laboratory or experimental-in silico).

The system allowed a better specialisation of our students through their projects, either for students who wanted to proceed with Ph.D. studies or for students with management profiles.

Furthermore, the system allowed the companies/ university departments to select the best candidate for each project. This, in turn, improved the employability of our students.

Conclusions: Based on student feedbacks, the number of research projects offered and employability of our postgraduates, this new system has been included in the curriculum of the Master´s Degree.

OP7: Experiential learning for postgraduate Doctor of Pharmacy students

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Introduction: Experiential learning involves the critical reflection of experiences related to selected areas of interest. The goal of such learning is to enhance professional and personal development skills using latest advances in research for updating clinical knowledge. The aim was to develop and apply an experiential learning portfolio for Doctor of Pharmacy (Pharm.D.) postgraduate students.

Material and Methods: An experiential learning portfolio consisting of a one-page written reflection form and an oral five-minute oral presentation component was developed and applied for first year Pharm.D. students. The reflection form consists of six questions and the presentation component requires students to find a recent scientific paper on the topic and focus on key points described relating it to pharmacy practice. Students were asked to select three sessions from their experience attending a local medical conference, complete a reflection form for each session selected and prepare a presentation focusing on one session.

Results: For each reflection students indicated: 1) reason for selecting the session; 2) expectations from the learning and learning objectives achieved; 3) relevance of this learning to the safe and effective practice of pharmacy; 4) importance of the learning to them personally and to their practice; and 5) benefits of this learning. An example of how the knowledge gathered could be applied to their area of practice was reflected in question six. Two group seminars for 18 students, led by two pharmacist preceptors, were held. During each two-hour seminar, nine students presented their written reflections and delivered a presentation. Critical issues identified by the group and reflections on strategies to be put forward with a focus on leadership skills were discussed.

Conclusion: The experiential learning portfolio developed comprises both written and oral reflection, as well as individual and group reflection. Student evaluation of such experiential learning should be undertaken.

OP8: Ph.D. programmes associated to the Faculty of Pharmacy of Salamanca University (Spain)

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Introduction: The Faculty of Pharmacy of Salamanca offers three Ph.D. programmes in Social Sciences and Health under the agreement of the EEES:

Pharmacy and Health

Pathophysiology and Pharmacology

Health and Development in the Tropics

Material and Methods: The information was obtained from directors of the programmes and the Evaluation of Quality Unit of the University.

Results: Programmes last for three years, to a maximum of five years. Some of the topics that the students can follow are:

Pharmacy and Health: Design, synthesis and evaluation of bioactive compounds; Chemoinformatic and molecular modeling; Pharmacokinetics-pharmacodynamics of antibiotics; Clinical Pharmacokinetics and Drug Monitoring; Development and evaluation of pharmaceutical forms; Polyphenol effects on diet and health; Pharmacoepidemiology or Pharmaceutical care among others.

Pathophysiology and Pharmacology: Damage of cardiovascular and renal systems and endothelial dysfunction; Cardiovascular pharmacology; Neuroendocrinology and obesity; Drug targeting and chemoresistance; Pathophysiology of exocrine pancreas; Redox signalling in hematological malignancies; Regenerative medicine.

Health and Development in the Tropics: Development of vaccines against helminthes; Molecular diagnosis of helminthiasis; Vector-borne diseases; Synthesis and evaluation of compounds against various infectious and parasitic diseases (Leishmaniasis, malaria, chagas); HIV immunopathogenesis, Antimicrobial resistance and microbiological diagnosis; Medical anthropology or cultural epidemiology.

In the last five years more than 150 students have followed those studies and over 64 have obtained their Ph.D. with Honours.

Conclusions: The programmes offer to the Ph.D. candidates the most advanced research and training, first-class facilities, a variety of international connections, as well as a stimulating environment that will open up plenty of opportunities for a successful career in academic or industry research.

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OP9: Early MD/Pharm.D Ph.D. Careers

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Introduction: The association gathers students around France who receive medical or pharmaceutical training and research training as well (master degree, Ph.D.) in order to become a MD/Pharm-Ph.D. to combine medical work with research. These training programmes have been created to address the lack of doctors or pharmacists in research fields in France but also around the world. Indeed the basic sciences are essential for the progress of medicine and highlight the necessity to link research and clinical work, in others words, to go from the bench to the 'bedside'.

Material and Methods: In order to promote the double career, different strategies have been developed in France. There are three schools where one could study: the School of INSERM (Institut Nationale de la Santé et de la Recherche Médicale), ENS (Ecole Nationale Supérieur) and a parallel curriculum at the University (Pharmascience and Medecinescience). Anyone of these allows students to begin an early maters degree and Ph.D. degree.

Results: In order to help the students, an association was created in 2009 called the Association Medecine Pharmacie Science (AMPS), with an active website (http://www.amps-asso.fr/) and composed of forums to share personal and professional experiences, a newsletter published every month, and diverse information. Moreover AMPS organises a national congress every year and this year AMPS organised the fifth European congress of MD/PharmD-Ph.D.

Conclusions: Our association counts more than 200 adherents: from clinic leaders to young students and is growing every year. We expected to form a network around France and develop a good way to train pharmacist and medicine students in research. Moreover a similar association was created last year at a European level for the purpose of creating a European network and facilitating exchanges between countries.

OP10: The Faculty of Pharmacy in Bratislava accredited a new postgraduate study programme in Clinical Pharmacy

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Introduction: Comenius University in Bratislava underwent a new cycle of state accreditation of university studies in 2014/15. The Faculty of Pharmacy was amongst the most successful faculties at the university with a total score of four points out of four; as well as the best credited institution in the field of 'medicine, pharmacy, and health sciences'.

Material and Methods: All 13 faculties of the University underwent a process of accreditation of their study programmes, on all levels (bachelor, master, doctoral). The focus was on the scientific background of the programmes and the professors to guarantee their quality; on material, technical, and information capacities; on staff quantity and quality; on the curriculum and the credit system; on the internal quality assurance system and its implementation; as well as on the final profiling of the graduates, and job opportunities.

Results: Next to previously accredited doctoral (Ph.D.) programmes that kept their position to educate further specialists in postgraduate studies in pharmaceutical sciences – Pharmacognosy, Pharmaceutical Chemistry, Pharmacology, and Social Pharmacy/Retail Pharmacy – a newly re-accredited programme in Clinical Pharmacy was established for the future period. The new postgraduate programme will focus on training in scientific methods in the study of efficient and safe drug use, and further specialise in the fields of pre-clinical and clinical trials, clinical pharmacokinetics, acute and chronic diseases prevention and pharmacotherapy, pharmaceutical care, risks in pharmacotherapy, drug therapy faults, drug toxicology, pharmacovigilance, pharmacogenetics, and pharmacoepidemiology.

Conclusions: The demand for highly specialised experts in the field of clinical pharmacy has become very evident in latest years. Pharmacists are gradually becoming involved in clinical projects and activities. Clinical pharmacy is an interdisciplinary branch amongst health professions that contributes significantly to optimal pharmacotherapy, enhances quality, efficacy and safety of drug use, and leads to a cost-for-therapy decrease at the same time.

PP1: A study on the contributions of faculty of pharmacy to postgraduate education with the-job training programme and opinion of graduates on that programme

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Introduction: Differentiation in health problems, changes and transformations in the health sector especially in the area of drug-pharmacy requires continuous improvement in the pharmacy profession. Postgraduate training is as important as pre-graduate education, and also an important factor for providing continuing professional development of pharmacists. In this study, the importance of the job training programmes organised by the Faculty of Pharmacy of Ankara University in the field of training places in order to provide continuing professional development is presented.

Materials and Methods: This study is a descriptive study. Study materials were obtained from questionnaires that were given to participants who attended the job training programmes organised by the Faculty of Pharmacy of Ankara University. Responses to a questionnaire to establish pharmacists' views about the job training programmes were presented in frequency tables. SPSS® 160 was used to evaluate the survey.

Results: The Turkish Pharmacists' Association and institutions such as the Chamber of Pharmacists Association, Hospital Pharmacists Association and the Public Hospitals Authorities carry out the job training programmes for pharmacists. In Turkey, the first job training programme for pharmacists was conducted by the Ankara University Faculty of Pharmacy in 1986. The second programme consisting of 26 titles including applied first aid training, social pharmacy, computer use in pharmacies was organised by Ankara University and Hacettepe University Faculty of Pharmacy in 1991. These training programmes were followed by the job training programmes conducted in 2010-2012 and 2015. According to the programme's survey results in 2010, 85.25% of attendees stated that the programme was a positive contribution to the pharmacy profession, and they want these programmes to be held by the University.

Conclusions: The job training programmes play an important role in the transformation and development after graduation. Continuous training and increasing participation would be more useful to pharmacists.

PP2: Ankara University Faculty of Pharmacy workshop results of graduates

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Introduction: Last year, an 'Alumni Workshop' was held for the first time as part of the 55 year celebrations by Ankara University Faculty of Pharmacy. Graduates working in different areas of employment gave their feedback during a training workshop. This feedback will contribute to curriculum development. The aim of this study was to determine the postgraduate training needs of graduates of the Faculty of Pharmacy and to make training programmes.

Materials and Methods: An alumni workshop was held with the participation of our graduates working in five different areas namely, Hospital Pharmacy, Community Pharmacy, Academic Pharmacy, and Drug and Cosmetic Industry. The graduates gave their feedback by answering the report in two hours The reports were read to the other workshop participants and faculty members. after a discussion, the necessary changes were made.

Results: At the workshop, graduates often stated that they had difficulty in applying the theoretical training to real life. Academic pharmacists stated that there is a lack of training in literature and reference writing that is affecting the training programme. In addition, all of the graduates who participated in the study are interested in information technology.

Conclusions: As a result, graduates are one of the most important resources for making assessments about the terms of university education. The Ankara University Faculty of Pharmacy has identified postgraduate training needs in accordance with the opinion of the graduates and then the identified job training programmes.

PP3: Flexible continuous manufacturing processes strategy and capabilities in pharmaceutical industry

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Introduction: The Institute of Pharmacy named S.Asfendiyarov Kazakh National Medical University is actively developing international cooperation in the framework of the memorandum with 21 foreign partner universities. Development and realisation of joint educational programmes with partner universities is carried out on the modules and coordinated by the Faculty of Pharmacy.

Currently, a joint educational programme with the St. Petersburg State Chemical-Pharmaceutical Academy, will ensure the transfer of expertise and professional competence to electronic resources. The educational programme is aimed at training a new generation of leaders in the pharmaceutical industry, and will allow for the exchange of best practice in the field of pharmaceutical science through modular training on Pfizer's company.

Material and Methods: The present education programme uses the following terms and definitions: web portal, information and educational resources, network technology, case technology, content; internet resource education organisations implementing distance education technology, information technology, distance learning and others.

Results: The first module was held in the period from February 29 – March 4, 2016, 'Flexible Continuous Manufacturing Processes Strategy and Capabilities in Pharmaceutical industry - Pfizer Quality Overview'. The module themes were: 1) Typical Batch process for Solid Oral Dosage vs. Continuous Manufacturing process; 2) Pfizer examples for Continuous Manufacturing: CMT, CDG and Portable, Continuous, Modular and Miniaturised Systems (PCMM); 3) Introduction to the statistical tools used in the pharmaceutical industry; 4) Properties and characteristics of the pharmaceutical tablet and parameters to define tablet quality; 5) Pharmaceutical company medical representative function background, overview and recent developments.

Conclusions: Furthermore, there are plans to hold two modules in April and May 2016 on urgent issues of modern pharmacy. After completion of the training modules, students will be tested. In case of successful completion of the test, students will receive a certificate from Pfizer.

PP4: The innovative form of the control practical skills of graduates in the specialty 'pharmacy'

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Introduction: Higher education is one of the main priorities of governments in many countries, including the Republic of Kazakhstan. Many universities of Kazakhstan are actively engaged in the implementation of active and innovative forms of educational processes. The Institute of Pharmacy at Asfendiyarov Kazakh National Medical University is not an exception. The basis of the educational activity of the Institute is, in particular, the introduction in the educational process of new methods of teaching with emphasis on practical skills. The objective structured practical examination (OSPE), which was officially implemented at final state attestation in the specialty "Pharmacy".

Material and Methods: The objective of the discipline "Pharmaceutical Chemistry" is the familiarisation of students with the basic methods of analysis of drugs or dosage forms. Students have the basics of pharmaceutical analysis, including the analysis pharmacopoeia.

Results: The list of tasks on practical skills for OSPE in the discipline 'Pharmaceutical chemistry' includes the following stages: the first stage - determination of physical and chemical properties of the proposed product; the second stage - determining identification quality indicators (transparency, colour, pH, solid particles, impurities); the third stage - identification of the drug; the fourth stage - the optimal conditions quantitation of active substances in the drug; fifth stage - the storage conditions.

Conclusions: The innovative form of OSPE in pharmaceutical chemistry by its proximity to the professional activities of graduates, and the variability of the objectivity belongs to the category of the best abilities of the future professionals.

Reference:

State Pharmacopoeia of the Republic of Kazakhstan.

PP5: Teaching pharmaceutical care at the bedside through an interprofessional approach

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Introduction: Offering experiential experience at the patient's bedside in an acute hospital setting exposes pharmacy students to real case scenarios and day-to-day interprofessional relationships. The aim was to develop pharmaceutical care bedside teaching to third and fourth year pharmacy students through a collaborative interprofessional approach.

Material and Methods: Undergraduate pharmacy students undertaking their clinical pharmacy experiential training are offered an experiential placement within the rheumatology field. The team led by a clinical pharmacist consists of two rheumatology specialist clinicians and a practice nurse. On their first day of the placement, the students are introduced to the clinical setting by the clinical pharmacist who briefs them on the teamwork approach and the logistic background of the placement. The students are given a rheumatology reference handbook to help them settle into the team. Students are supported to develop active participation so to ensure a fruitful academic experience.

Results: During the placement a maximum of two students per placement, shadow the clinical pharmacist in carrying out pharmaceutical care sessions and answer participate in dealing with medicines information queries. They attend and participate all patient education sessions both those carried out on a one-to-one basis and those carried out in patient groups. The students attend the specialists clinics during the weekly out-patient clinics and the infiltration procedure clinics. The students are also exposed to the practice nurse clinics. During their placement, the students are encouraged to attend journal clubs. They are also involved in data collection of research undertaken by the team.

Conclusion: The pharmacy students learn to enhance their interdisciplinary skills, research skills and gather clinical hands on knowledge and experience preparing them for the real-life scenario.

PP6: Preparation of pharmacists to the role of mentors for students completing internships in the community pharmacy

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Introduction: An important element the of pharmacy curriculum is to provide an adequate number of the internship within the community pharmacies. The main goal of internship is to increase the students' competencies, mainly in pharmaceutical compounding and counselling. It should be highlighted that the didactic process during internship can significantly impact the students' perspective on profession. Nevertheless, the Faculties of Pharmacy have only a limited influence on the internship course and do not participate in any aspect of preparation of the community pharmacists to the role of teachers/mentors. The goal of our study was to analyse the quality of the didactic process, during the vacation internship, based on information received from the students.

Material and Methods: A survey study was conducted among the fifth-year pharmacy students, who in the preceding years had completed their community pharmacy internships. This survey consisted of 17 questions (of mostly closed type).

Results: Three hundred and sixty one completed the surveys. A majority of respondents have admitted that the vacation internship provided them with exposure to many aspects of pharmaceutical practice. Despite designation of certain pharmacists' to be responsible for the internship's course, students quite often received some professional information from others employees, including technicians. In addition, the students often indicated that there are some gaps between the theoretical knowledge (learned from the School of Pharmacy), and practice, demonstrated by personnel of the pharmacy.

Conclusions: The quality of the didactic process during internship requires assessment and supervision. The pharmacists, who are mentors to students should obtain academic support in the area of education and training to prepare them for teaching. Some topics, relevant to the responsibility for teaching of professional pharmaceutical skills should be added to the curriculum of postgraduate pharmacy education. The didactic process should be based on close collaboration between teachers and professionals.

PP7: Doctorate of pharmacy students' evaluation of drug information and statistics tutorial

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Introduction: The Department of Pharmacy at the University of Malta offers a three year Doctorate of Pharmacy (Pharm.D.) programme in collaboration with the College of Pharmacy of the University of Illinois in Chicago. One study unit relates to Drug Information and Statistics. The aim was to evaluate a new tutorial which was introduced this year in this study unit.

Material and Methods: The three-hour tutorial focused on pharmacist-recommended use of statins and the new format of Issue 70 of the British National Formulary (BNF). During the first part of the tutorial, students were led to discuss advantages and disadvantages of having statins as pharmacist-recommended medications. In the second part of the session, students were given seven case studies where they had to use the BNF as the primary source of information. Students were provided with an evaluation sheet at the end of the tutorial to rate, on a 5-point Likert scale, their reflections on the demonstrator's presentation and to answer questions directly related to the tutorial set-up.

Results: Fourteen students from a total of seventeen participated in the tutorial. Twelve strongly agreed that the presentation was well prepared and organised. Eleven students strongly agreed that the demonstrator appeared knowledgeable about the subject, encouraged student participation and presented up-to-date developments in the field. Twelve students claimed they found the discussions related to statins and the new BNF format engaging and they felt they could apply what they learned during the taught modules into practice.

Conclusion: This evaluation demonstrates that the students found value in the tutorial organised. The Doctorate of Pharmacy programme aims to give students skills in critical thinking and literature analysis which could be applied in decision-making for selecting drug therapy and evaluating new drugs.

PP8: Historical overview of pharmacist postgraduate education in Latvia

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Introduction: The Pharmacists' Society of Latvia (LFB) and higher education institutions are involved in pharmacist postgraduate education. LFB has introduced a system of competences based on continuing education for community pharmacists and Riga Stradiņš University implements the study programmes in industrial and clinical pharmacy. Historically, pharmacist postgraduate education was influenced by various political events in Latvian territory.

Material and Methods: Data was collected from the Latvian State Archive and the periodical press of the XX century. Research is descriptive and retrospective.

Results: The first independent Latvian Republic existed from November 18, 1918 to 17 June 1940. The regulatory framework issued in 1938 mentioned the Pharmacists' Society of Latvia as responsible authority for pharmacist knowledge. From 1938 to 1940 the pharmacist Augusta Maizīte (1894-1966) organised five education courses for pharmacists, pharmacist assistants and trainees. In 1944 Latvia was re-occupied by the Soviet Union. In 1948 , the Main pharmacy administration (GAP) started giving pharmacists further training. Pharmacy managers were instructed to organise the pharmacy staff skill enhancement. In 1944 many Latvian inhabitants fled as refugees. To prepare the Latvian pharmacists in exile for work, the International Refugee Organisation (IRO) headquarters located in Geneva in 1950 organised educational training courses. From 1950 onwards, most of the Latvian pharmacists emigrated from West Germany to USA, where a large proportion continued to work in their profession.

Conclusions: Pharmacist postgraduate education in Latvia was seen as important already in the 30s of the XX century. But in the XX century political events prevented the creation of a unified postgraduate education system. In 1962, Riga Medical Institute was opened to offer training to doctors and pharmacists, and to initiate systematic postgraduate training.

PP9: Student evaluation of coursework for pharmaceutical technology modules

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Introduction: A class presentation related to a real case scenario was introduced in two study units related to pharmaceutical production processes to increase student participation during lectures[1]. This study aimed to evaluate students' perception towards the developed presentations.

Material and Method: A self-administered questionnaire was disseminated to students after the presentations were held. The questionnaire consisted of seven closed-ended questions using a 5-point Likert scale, ranging from strongly agree to strongly disagree, and two open-ended questions. The close-ended questions evaluated the tasks performed and skills developed. The time allocated for each session and whether the experience helped for future presentations were also evaluated. In the open-ended questions students were asked to state which part of the task they enjoyed doing the most and if they have further suggestions for future presentations.

Results: Six out of ten students following the module answered the questionnaire. Five agreed that the assigned task reflected material covered during lectures and four agreed that the exercise helped them to understand lectures better. Four agreed that the exercise stimulated them to learn more about the subject. All participants agreed that their presentation skills were improved. The majority agreed that their confidence was improved (n=4), are better prepared for future presentations (n=5) and that the time allocated was suitable (n=5). The presentation (n=3) and research part (n=2) were rated as being the most enjoyable task. One student suggested including more assignments in the course.

Conclusions: The presentations were positively received by students. The tasks given stimulated students to learn more and understand better the theory presented during lectures. Skills developed will help students in their future professional career.

Reference:

Sammut Bartolo, N., Vella, J., Serracino-Inglott, A., Azzopardi, L.M. (2015). Increasing student participation and theory application in pharmaceutical technology lectures. EAFP conference, Athens, 2015.

PP10: Industrial pharmacy visits for pharmaceutical technology students

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Introduction: Academic visits to pharmaceutical industry sites are organised as part of study units related to pharmaceutical production processes to introduce students to the real pharmaceutical scenario and to expose them to experiential learning. During visits students are shown how the daily activities are performed. They have the opportunity to see and learn about the equipment used for processes and analysis and to learn about the documentation system used. This study aimed to evaluate students' perception towards the visits.

Material and Method: Students evaluated the three visits by means of a self-administered questionnaire. The questionnaire consisted of seven closed-ended questions using a 5-point Likert scale, ranging from strongly agree to strongly disagree. The questionnaire evaluated the relation between the site visited and subjects studied, students' expectations and knowledge gained.

Results: Six out of ten students following the study units answered the questionnaire. All participants agreed that sites visited related to the subject studied. Five agreed that the visits met their expectations. Visits were found to be useful to apply principles learned during lectures (n=6) and to experience the importance of following Good Laboratory and Good Manufacturing Practice guidelines (n=5). All participants agreed that through the visits they gained more knowledge related to the application of instrumentation. Five participants agreed that the industrial visits helped them understand better how the pharmaceutical industry works. All participants agreed that the activity was enjoyable.

Conclusions: The introduction of academic industrial visits to pharmaceutical technology students helped students to better understand concepts and processes and to familiarise with activities performed on a daily basis.

PP11: Orthopaedics, a commitment to the future for pharmacists

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Introduction: Orthopaedics is one of the services offered by some community pharmacies. The higher life expectancy and ageing population needs support to avoid and treat mobility problems, arthritis, bones or muscle injuries. Pharmacists in the field of orthopaedics strengthen the surveillance system for patients using medical devices and prevent adverse incidents these products may generate.

Material and Methods: This postgraduate course is for pharmacists in office, pharmacists that have years of experience and students that have got 240 ECTS.

Practical training took place with patients affected by mobility problems associated to both their lower and upper limbs, back and neck or those with gait disturbances. The course consists of six modules held for six weeks concluding with the development of a monographic work and oral defence thereof.

Results: Table I summaries the results corresponding to the answers given by students of the last four courses to the following questions:

1. Are you safer at recommending orthotics in community pharmacy?
2. Do you have orthopaedics section in the pharmacy?
3. Do you have orthopaedics in a separate establishment from the Pharmacy?
4. Do you make insoles?
5. Do you have a section for technical aids?

Table I

Question	2011-2012	2012-2013	2013-2014	2014-2015
1	100%	100%	100%	100%
2	92%	100%	65%	100%
3	77%	0%	34%	60%
4	17%	0%	39%	30%
5	67%	100%	43%	40%

Conclusions: A course in Orthopaedics for pharmacists has been offered by the University of Alcalá for over 15 years. Aims of the course include improvement of anatomical, physiological, technological and health legislation knowledge and acquisition of new capacities and skills for the design, manufacture, technical adjustment and dispensing of ortho-prosthetic products. All these will contribute to provide adequate patient and pharmaceutical care. From its origins more than 1,000 students have been trained.

PP12: Implementation of a brewing science and technology master as a postgraduate programme in the school of pharmacy

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[2]*ESCEMA Foundation*

Introduction: The multidisciplinary background acquired with the pharmacy degree provides pharmacists with a broad base in food science and technology (Orden CIN/2137/2008). In fact, 13.5% of pharmacists attached as Spokespersons to the General Council of

Pharmaceutical Associations of Spain work in food related industries. In order to improve their academic background and to facilitate their employability in the food industry this Master's in Beer Science and Technology was offered.

Material and Methods: An evaluation and analysis of the six academic editions of the master have been carried out. In addition, satisfaction surveys conducted by ICE-UAH at the end of each course have been considered. They give an idea about student satisfaction and identify the weaknesses to be improved (http://www3.uah.es/ice/UTC/documentos/encuesta_ satisfaccion_alumnado.pdf).

Results: The Masters has been taught on average to 12.17±3.70 students/year, (Figure 1), coming from 12 different countries (Table 1) being 18.32±6.79% women. Most of the students (71.4%) chose this Masters based on the need for qualified professionals in this field.

Figure 1

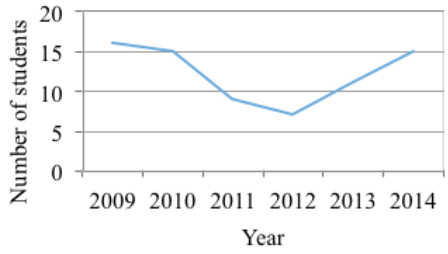

Table I: Students' countries of origin (%)

Angola	Argentina	Brasil	Chile	Costa Rica	Ecuador	Spain	Honduras	Mexico	Nicaragua	Peru
1.36	4.11	6.85	2.74	2.74	10.96	63.04	1.36	1.36	2.74	2.74

Students reported high satisfaction rates with the programme, particularly related to manufacturing of different types of beer in pilot scale. The average mark was 8,19±0,39 out of 10.

Conclusions: The Masters in Beer Science and Technology has achieved the following issues:

- Creation of spaces for reflection and debate
- Project development with high scientific and technological innovation
- Adherence to the sustainability idea by using surplus production and saving energy resources
- Opportunities for business collaboration

PP13: Stepwise learning from first year to postgraduate studies of pharmacy degree

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Introduction: During the degree studies, the students should acquire the specific knowledge needed for developing adequately the professional and postgraduate training. On this basis an important milestone of any degree is the level acquired by the students in the first year. Then, the transition from secondary school to the degree seems to us to be a crucial step in the learning chain for the exploitation of the degree resources.

Material and Methods: This study is focused on demonstrating the influence of the previous level in chemistry, physics and mathematics on the marks of the first semester of the pharmacy degree, by means of:

(1) Evaluation of the knowledge in topics needed for a better understanding of the first year subjects.

(2) Comparison of these results with the marks of the first semester.

Results: We have used the new subject Scientific Methodology and Research as a reference to demonstrate how the number of students that succeed in the subject, is slightly but concomitantly increased as the score in the initial test increases; whereas in any of the other subjects that use concepts from basic areas (Mathematics, Chemistry and Physics), a strong increase in the success is observed along improving the marks obtained in the initial test.

Conclusions: Considering university learning as a chain process, it is important to establish a milestone of knowledge at the beginning of the degree. It could help improve the yield and quality of the students in post graduate studies in pharmacy education.

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PP14: Experience with master degrees in the Faculty of Pharmacy of the University of Salamanca

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Introduction: The Faculty of Pharmacy of the University of Salamanca offers four official Master's programmes linked to different speciality areas of Pharmacy: Master in Evaluation and Development of Drugs, Master in Cellular and Molecular Pathophysiology and Pharmacology,

Master in Tropical Diseases, and Master in Chemistry and Pharmacy of Natural Products. A summary of characteristics and results after five years of experience with these Masters degrees is presented.

Material and Methods: Information was obtained from Directors of Masters and the Evaluation of Quality Unit of the University of Salamanca.

Results: The Masters are organised in 60 credits over one year, except the Master in Chemistry and Pharmacy of Natural Products, which is organised in collaboration with the Polytechnic Institute of Bragança (Portugal) and requires 120 credits over two years. The Master in Evaluation and Development of Drugs offers two specialties: i) Design, Development and Evaluation of Drugs, with a research orientation; and ii) Management and Manufacturing in Pharmaceutical Industries, with a professional orientation. The other three Masters are also oriented to the research pathway. The number of places offered per year varies between 20-40, and students can choose between final Master projects focused on research projects in the laboratory or literature review projects.

Around 80-160 students have obtained the Masters degree in each programme of 60 credits in five years and between 96-99% of enrolled students completed their Master degree in one year. About 30 students have obtained the Master degree in Chemistry and Pharmacy of Natural Products and this academic year the fourth batch of students will finish. The percentage of foreign students varies between 15-40% depending on the programme.

Conclusions: The wide variety of Masters programmes has generated a considerable interest among our and foreign students and has remained steady from year to year.

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PP15: Postgraduate education programme for Pharmacy Management

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Introduction: There are 25 pharmacy faculties providing education in Turkey. In these faculties, qualifications related to the field of 'Social, Behavioural and Administrative Pharmaceutical Sciences' stated in Turkish National Pharmaceutical Sciences Education Programmes Accreditation Standards and Instructions, and which is a main component of core education programme, are aimed to be ensured by the courses provided by Department of Pharmacy Management. These are the courses such as Pharmacy Management, History of Pharmacy, Pharmacy Ethics and Patient-Pharmacist Communication.

However, all of the pharmacy faculties do not have a Department of Pharmacy Management. Instructors having Ph.D. in this field are present only at Ankara, Hacettepe, Ege, İstanbul, Marmara and Erciyes Universities. Instructors of other disciplines provide these courses at other universities. This constitutes an obstacle to homogeneity in providing these courses.

Material and Methods: Therefore, "Pharmacy Management Workshop" was carried out by participation of the instructors providing these courses, in June 2015 in order to ensure homogeneity and increase the quality of these courses. Some decisions were made at the end of this workshop, and proceeded to the implementation stage. In particular, the curriculum of Pharmacy Management and necessary actions to standardise postgraduate education programmes were determined.

Results: In this study, the determined curriculum, and the education programme under its scope will be presented, and the results will be discussed by taking the postgraduate programmes for Pharmacy Management in other countries into account.

Conclusions: As a conclusion, the number of instructors is inadequate because of the fact that only Ankara and Hacettepe Universities have doctoral programmes in the field of Pharmacy Management. "Pharmacy Management Workshop" carried out in 2015 was a beginning for the developments in this field. The curriculum determined during this workshop was provided to all Faculties, and homogeneity of the content of the courses was ensured.

PP16: Erasmus: an open window for future pharmaceutical studies

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Introduction: Since the first years of our studies, the complexity of pharmaceutical science was obvious and well realised. Pharmacy was no more equivalent only with selling drugs in a community pharmacy.

Methods: The combination of many different scientific fields, such as medicine, biology, chemistry and the very unique part concerning drugs, all presented at the same time, consists a science extremely special with unlimited opportunities. But sometimes this variety makes students confused about their future pharmaceutical path. Do I have to follow postgraduate studies? If yes in which field? In which country? Can I do it? Do I have the skills? What I want to do in my life? And there is Erasmus which can change everything. We asked students from our faculty to share with us their Erasmus experience and fill a questionnaire concerning its influence in their future studies.

Results: The answers were clear and a new approach for postgraduate studies, research and an academic career was a common need for everyone.

Conclusion: Erasmus offers more opportunities, more collaboration with scientists from different fields and countries. Erasmus changes lives.

PP17: Drug marketing strategies in Turkey: an ethical evaluation of antihyperthenive drugs registered between 2005-2013

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Introduction: Drugs are being registered according to Human Medicinal Products Licensing Regulations enacted in 2005, 19 January in Turkey.

The numbers and utilisation rate of drugs being registered between 2005-2015 will be determined. Considering the numbers of drugs registered by FDA and EMA, marketing strategies of drugs will be evaluated in an ethical perspective.

Material and Methods: Materials of this study are the antihypertensive drugs registered between 2005-2013 by Ministry of Health and the IMS reports. Licenses are observed in 4 criteria as produced in Turkey, imported licenses, one active ingredient and combined drugs.

Results: There are 548 hypertensive drugs being registered between 2005-2013. Some of them (272) have single active ingredient, 276 of them are combined drugs. 431 of these antihypertensive drugs were registered as manufacturing license and 117 of them were registered as import license. Maximum 32 licenses warranted of a single active ingredient Valsartan. 37 licenses warranted of combined ingredients Valsartan and Hydrochlorothiazide. Single active ingredient, Olmesartan Medoxomil, preparation registered maximum nine times. In addition, eight imported licenses warranted of a combined ingredients Amlodipine and Atorvastatin. The unit prices of drugs are not differentiated much. On the other hand, 20 hypertensive products do not have any sales in 2013. Sales of imported products often have a greater share figures.

The applications were made but 62 single and combined antihypertensive drugs not yet registered. The number of registered single active ingredient antihypertensive products by FDA is 305, combined preparations is 158. The number of registered single active ingredient antihypertensive products by EMA is 19, combined preparations is 20.

Conclusions: In conclusion, drug licensing should be encouraged not only to increase the number of registered antihypertensive drugs but also to provide to market safer, more effective ones.

- 2011, joint meeting of the COIFFA and EAFP where Benito del Castillo was elected in Lisbon (Portugal). Honorary President of the EAFP.

PP18: Use of web interactive multipurpose server in medicinal chemistry education

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Introduction: The internet is used more and more in education and research. Apart from the Internet smartphones and tablets have emerged which are also being used more and more frequently in education. The objective of this work is to propose an interactive platform to study with fun, medicinal chemistry courses.

Methods: In 2013, to illustrate the Medicinal Chemistry courses for students DFGSP3 (3rd year of Pharmacy) in the EU 17 (Drugs from synthetic and natural origin), we decided to use the "WIMS, Web Interactive Multipurpose Server" platform to create interactive digital lessons in Medicinal Chemistry. This project is especially in the form of multiple choice questions (MCQ) for associating the structures of active ingredients with different targeted pathologies.[1] In addition to that, other teaching resources concerning drug synthesis addressed different therapeutic classes.[2]

Results: By using this platform, the student can find a personalised workspace and have access to a self-assessment through an exercise programme. These educational resources WIMS were incorporated into instructor-led training (3rd year), where students can acquire the pedagogical basis indispensable for the success of the final review of the UE17. Following the sessions, students gained significant confidence and they spent more and more time for learning medicinal chemistry. This project WIMS in Medicinal Chemistry course was endorsed by the AFECT (Association Française des Enseignants de Chimie Thérapeutique, Association of Medicinal Chemistry teachers in France).

Conclusions: Didactic core courses can be modified to accommodate the change in courses and the latest updates. Considerable time was required to prepare this type of platform; however, this work was very highly rated by students indicating that this preparatory time was well-invested.

References:

[1]For free access, please, visit: http://wims.u-psud.fr/wims/wims.cgi?module=U2/chemistry/qcmmedchem.fr

[2]http://wims.u-psud.fr/wims/wims.cgi?session=VNBDE1A1BC.2&+lang=fr&+module=U2%2Fchemistry%2Foefmedsynthese.fr

PP19: Postgraduate studies at the School of Pharmacy, University of Eastern Finland

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Introduction: The School of Pharmacy is part of the Faculty of Health Sciences at the University of Eastern Finland's Kuopio campus. The Faculty has approximately 580 doctoral students in four doctoral programmes. The School of Pharmacy is hosting a Doctoral programme of drug research[1] and coordinating it in collaboration with FinPharmaNet network[2]. The Doctoral programme of drug research has about 70 postgraduate students. 10-15 new students will be enrolled each year, and approximately 10 students are graduated yearly.

Material and Methods: During application process, a student draws up a research plan with a supervisor at the school and applies to the faculty for the right to pursue doctoral studies. Once the application is processed by the doctoral programme, the faculty grants the right to pursue doctoral studies, appoints supervisors and approves the research plan.

Results: In the beginning of doctoral studies, a student submits the personal postgraduate study plan (HJOPS) to the faculty, and performs studies described in HJOPS. In order to get the postgraduate degree, total of 40 points of studies defined in the degree structure (*e.g.* transferable skills studies 5-15 points, and studies in the discipline and field of research 25-35 points) are required.

The main part of the postgraduate studies is the thesis - doctoral dissertation- carried out under supervision of supervisors and completed in the main field of the study. The doctoral dissertation must demonstrate that the student has deep acquaintance with the field of research, with related scientific fields and with general scientific theory. In addition, the dissertation must show the student's ability to apply, independently and critically, the methods of scientific research in one's field of research and the ability to produce new information independently. An approved doctoral thesis can be either a single research study published as a monograph or a sufficient number of scientific publications or manuscripts accepted or submitted for publication. Before graduation, a postdoctoral student defends his/her dissertation against an external opponent in the public examination that is open to the general public.

References:

[1]http://www.uef.fi/en/web/dpdrugresearch/home

[2]http://www.fpdp.fi/

PP20: Longitudinal and transversal coordination of the training placements within the courses that compose the study plan of the pharmacy degree at the University of Sevilla

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Introduction: In the Faculty of Pharmacy of the University of Sevilla, before the incorporation of the students to the mandatory training placements, they have to attend a one week seminar in relation to the skills and capabilities they have to acquire during their stay in community pharmacy or hospital pharmacy. The correct coordination of this subject with the others included in the same study plan is an important task in order to avoid overlapping. Moreover, evidences of a good coordination are required for accreditation purposes.

Material and Methods: Every academic year different coordination activities take place. Meetings between subjects coordinators of the degree are organised under the direction of the Vice dean of Academic Affairs. Improvement opportunities are identified and corrective decisions are made.

Results: The training placements are the subject where the students have the opportunity to practice all the knowledge, competences and skills previously acquired. Among the disciplines included in our study plan there are a wide number with a direct interaction on the training placements such as Pharmacology, Public Health, Pharmaceutical care, Toxicology, Clinical Pharmacy, Physiopathology, *etc*.

Conclusion: The coordination mechanisms applied and the decisions made have allowed to improve the quality of the seminars of the students attending the training placements.

PP21: International students mobility in the Faculty of Pharmacy of the University of Sevilla (Spain)

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University of Sevilla, Sevilla, Spain

Introduction: In the Faculty of Pharmacy of the University of Sevilla four different degrees are available for students: Degree in Pharmacy, Degree in Optics and Optometry, Double Degree in Pharmacy and Optics and Optometry, and Master Degree for Professional Specialisation in Pharmacy. Internationalisation is one of the main goals for the University of Sevilla. Thus, the International Relations team of the Faculty of Pharmacy is working on the consolidation of a wide and attractive mobility offer, through academic bilateral agreements, that allows the intellectual enrichment of our students, as well as to host incoming students looking for a personal

and academic experience in a University with more than 500 years.

Material and Methods: An analysis of the current mobility offer for outgoing students of the Degree of Pharmacy has been performed. Moreover, drawbacks and strengths have been identified.

Results: For the 2016/17 academic year, 125 students could benefit from an international experience in 16 different countries in Europe and Latin America. However, not all positions will be covered mainly due to language requirements. Italy, followed by France and Portugal are the main receptors of our students. The experience is evaluated as highly satisfactory for the students.

Conclusion: The analysis performed suggests that language skills must be promoted among our students in order to increase the mobility. Also, the incorporation of new proposals would be welcome in the frame of the Erasmus+ Programme. The Faculty of Pharmacy invites potential partners to visit our web page (www.farmacia.us.es/movilidad) and to contact us at erasmusfarmacia@us.es.

PP22: Development of an experience-based Masters programme in Clinical Pharmacy in Norway

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Introduction: Incorrect use of medications has major implications for patients and society, and the Norwegian authorities emphasise the importance of increased involvement of pharmacists in multidisciplinary teams around the patients in nursing homes and hospitals, as well as in the community pharmacy setting. Recently a bill passed the Norwegian Parliament on this issue. To fulfil the increasing needs for clinical pharmacy expertise in Norway, School of Pharmacy at the University of Oslo has developed an experience-based master's programme in clinical pharmacy.

Material and Methods: To participate in the programme the student must have a basic pharmaceutical education (bachelor or master) from a university or a university college. In addition, she or he is obliged to have at least two years of relevant work experience, *i.e.* as a pharmacist in community pharmacy or hospital pharmacy.

Results: The master curriculum is a part-time programme, consisting of 90 credits, comprised of six individual courses, each of 10 credits, and a thesis of 30 credits. The courses may be completed in individually tailored order and over a time period of maximum six years, in order to make the programme flexible for the students. Compulsory courses constitutes of 30 credits, while the remaining 30 credits are optional specialisation courses. The compulsory courses cover *e.g.* clinical pharmaceutical methodology, clinical communication, clinical biochemistry in relation to drug use, as well as pharmacological variability and individualised drug therapy, while the specialisation courses cover various pharmacotherapeutic areas.

Conclusion: The Masters thesis has quality-assured drug use as the primary goal, and the work with the thesis are based on interdisciplinary collaboration and is generally a patient-centred project.

PP23: Ankara University Faculty of Pharmacy graduates' opinions about education

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Introduction: In defining educational goals and objectives, many different application examples can be seen for ensuring stakeholder participation and contribution. The goals and objectives related to education are expected to be defined with the participation of all stakeholders.

Ankara University Faculty of Pharmacy organises, strategic planning meetings for every five years with internal and external stakeholders to evaluate the educational goals and objectives.

The internal stakeholders consists of management and education related boards of the faculty, academic staff, students and external stakeholders consists of alumni, professional organisations.

Using the knowledge and attitudes of graduates to get the ideas for determining how they benefited from undergraduate education is very important.

The aim of this study is to determine Ankara University Faculty of Pharmacy graduates opinions about their undergraduate education and to use information to guide undergraduate educators.

Material and Methods: The material of this study is the questionnaires that were sent by e-mail to graduates of Ankara University Faculty of Pharmacy.

Questionnaires delivered to 1000 graduates, 100 of them answered and 89 of them were included in the evaluation.

The questionnaires were assessed by using SPSS 16.0.

Results: 56.3% of the graduates replied the expression "Undergraduate education I received gave me a sense of ethical responsibility." as totally agree. In a survey conducted by the American Association of Faculties of Pharmacy this ratio was 42.5%. 39.8% of the respondents, replied the expression "Undergraduate education I received is enough for my professional life" as agree and 15,5% as totally agree. In a similar study, this rate was 57.4%.

Conclusion: As a result, getting the training and practice related ideas of graduates is an important way to upgrade the quality of education. Therefore, all faculties of pharmacy should meet with their graduates to improve their education.

PP24: Pharmacy postgraduate education in Turkey

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Introduction; The main objective of pharmacy faculties in our country is to train qualified manpower required by the pharmacy sector on both undergraduate and postgraduate level. Postgraduate education consists of a Masters and Ph.D degree and a programme in Proficiency in Art in art disciplines. In order to qualify for a post graduate programme, a candidate must have a bachelor's degree and achieve adequate grades for the applied programme stipulated in the Post graduate Education Examination for Academic Personnel (ALES) which is held centrally by the Measuring, Selection and Placement Center (ÖSYM) and have a valid foreign language score. Furthermore undergraduate / graduate grade score averages and interview results may also be evaluated.

Postgraduate education in Turkey started with the establishment of the School for Pharmacy which was established before the Republic era. However, the first doctorate thesis was done in the field of Pharmaceutical Toxicology in 1968 after the establishment of pharmacy faculties started.

In this study, The distribution of graduates and current student numbers in faculties, programmes and universities in Turkey in the field of pharmaceutics will be determined and the academic personnel requirements of Pharmaceutical Faculties will be discussed.

Material and Methods: The material for this study comprises of the data from Health Sciences Institutes in Turkey which provide postgraduate education about Pharmacy and the distributions of current academic staff obtained from Faculties of Pharmacy.

Results: As of 2015 there are 25 Faculties of Pharmacy in Turkey which accept students. According to the results of our study 16 Faculties of Pharmacy provide postgraduate education in 20 disciplines. To date the most postgraduate education has been provided by Ankara University of Faculty of Pharmacy and the faculty with the highest number of postgraduate students is the Marmara University of Faculty of Pharmacy as of 2016. The programme with the most highest number of postgraduate education is Pharmaceutical Chemistry while the Department of Pharmacognosis has the highest number of students at present. While the number of postgraduate students in the field of pharmacy was 763 in 2007, today it has reached 2629.

Conclusions: When considering the current distribution of academic personnel it is evident that there is an urgent need to train academic personnel in newly opened faculties of pharmacy and those to be opened. However, taking into consideration that there will be an excess of 9500 pharmacists in 2023 in Turkey it is recommended that new faculties of pharmacy are not opened and that measures are taken to open new postgraduate programmes which are needed in the profession and to enhance the quality of current academic personnel.

PP25: The role and ethical responsibility of a pharmacist with respect to non-medical products in Turkey

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Introduction: In recent years the use of non-medical products is increasing for wellness in Turkey as in the world. With the increasing demand for food supplements, maternal and child health products, traditional and alternative treatment methods are industrialising rapidly. Pharmacists begin to give more space to non-medical products along with rising demand. Social change and changing needs of the modern man has led to the development of sales strategies involving also non-medical products in addition to medical-oriented services.

Pharmacists as health professionals have begun to sell non-medical products that are more profitable and requires less bureaucratic procedures. It is a fact that community pharmacies should maintain its continuity as a business as well. This is where many are faced with ethical dilemmas and issues.

The aim of this study is to describe how sales of non-medical products can be made within the framework of ethical principles and to expose the pharmacist's ethical responsibility in this regard.

Material and Methods: A questionnaire was prepared for community pharmacists in Ankara and a survey method was conducted. Data were coded and entered into an SPSS version 20 software programme for statistical analysis.

Results: A study about pharmacist's responsibility with respect to the use of natural health products in Canada indicates that pharmacists should provide accurate information about product's efficacy, toxicity, side effects and interactions. A large part (84%) of the participants sell herbal drugs and 87.3% of the pharmacists sell food supplements. Most of the pharmacists (91%) reported that information about non-medical products should be taken from pharmacist.

Conclusions: In conclusion, continuous learning programmes should be due to the fact that non-medical products affect the human health directly or indirectly like medical products. It is believed that pharmacists should be willing to participate in this programmes.