

improve patient outcome and patient care, in order to support a hospital pharmacy CTF legislation process in the European Union.

Material and methods We identified 70 publications based on data up to 2010 from our previous study¹ and were evaluated with indepth assessment regarding pharmacists' qualifications.

Results Forty (57%) publications had sufficient information on the qualifications of pharmacists and an additional 7 (10%) papers had partial information. Of the papers with detailed information on pharmacists' qualifications, 30 (43%) defined the pharmacists as 'clinical pharmacists' having additional training. Other qualifications were mentioned, such as intensive care, pain, oncology, paediatric, internal medicine and infectious diseases specialised pharmacists, that also verified the importance of postgraduate training. Further information on the qualifications of pharmacists were included in additional training to highlight their competency in clinical services. The publications provided evidence of the positive effect of pharmaceutical interventions for patient outcomes in many fields, including internal medicine, acute care medicine, oncology, paediatrics and surgery, also demonstrating the economic benefits of the interventions.

Conclusion and relevance Clear evidence was provided that only qualified pharmacists with a postgraduate education can provide the correct services to patients and consequently improve their outcomes, similar to other professions (physicians and nurses) in the healthcare system.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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No conflict of interest.

6ER-019 TEACHING AND LEARNING EFFECT ANALYSIS OF AN INTERPROFESSIONAL TRAINING PROGRAMME FOR UNDERGRADUATE PHARMACY INTERNS

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Background and importance Insufficient communication and lack of integration between medical departments can lead to adverse events.

Aim and objectives The purpose of interprofessional education (IPE) is to educate students on how to enhance their interprofessional practice (IPP) and improve healthcare outcomes for patients through teamwork.

Material and methods Clinical teachers and students (undergraduate pharmacy interns) attended at least three consensus meetings between medical departments for a patient based situation, such as bisphosphonate related osteonecrosis of the jaw. Data on teaching and the learning effect were collected with a 5 point questionnaire (threshold based on expert validity as 3) between November 2016 and September 2019. The outcome of two way feedback between the clinical teachers and students was evaluated with a one sample t test using SPSS (Statistical Product and Service Solutions) V.23.0.

Results Thirty-eight questionnaires were collected for each patient based situation. The average score was up to 3 for teachers assessing students and up to 4 for students assessing

teachers. An improvement in knowledge and skill with the interprofessional training was found (eg, an increase in understanding of common morbidities and diseases (4.39 ± 0.59), improved communication skills with other professionals (4.37 ± 0.63) and increasing familiarity with the referral process between medical departments (3.24 ± 0.63)). The satisfaction of students with the interprofessional training was as follow: appropriately arranged learning content (4.58 ± 0.55), meeting time (4.24 ± 0.68) and instructor qualifications (4.66 ± 0.58).

Conclusion and relevance Our results indicated that interprofessional training for a patient based situation had a positive influence on students' collaboration with medical departments. Several patient based situations translated to IPE/IPP in our hospital were listed in a book and published as a reference teaching material.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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6ER-020 STANDARDISATION OF PROCESSES BY ELECTRONIC ASSISTED PRESCRIPTION PROGRAMME IN A UNIVERSITY PAEDIATRIC HOSPITAL

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Background and importance Standardisation of processes and electronic assisted prescription programmes (EAPP) are essential tools to prevent medication errors, especially relevant in vulnerable populations, such as children.

Aim and objectives To standardise the processes associated with pharmaceutical prescriptions for hospitalised paediatric patients in a university hospital, through an EAPP, as a precursor to the installation of automatic dispensing cabinets.

Material and methods The study was conducted in a tertiary university paediatric hospital with intensive care (ICU) and paediatric onco-haematology units (reference population 557 576 inhabitants), during the period July 2018 to June 2019.

Interventions performed to ensure patient safety during EAPP implementation were: (1) meetings with professionals involved to agree on particularities/actions; (2) adaptation/validation of drug information in the EAPP to the paediatric population; (3) configuration of the EAPP login credentials; (4) training activities for nurses (all individualised sessions as required by work shifts) and doctors (group sessions to explain the tool and individualised training to prescribe); (5) protocolisation of pharmaceutical prescriptions for frequent pathologies; and (6) standardisation of intravenous infusions (fixed concentrations) for administration of drugs in the ICU.

The process was conducted in areas with simple prescriptions to those with more complex prescriptions. As an initial pilot, one area maintained a double prescription system to detect weaknesses/areas of improvement. Pharmacists performed pharmaceutical validation of prescriptions and spent part of their time in the paediatric units resolving doubts/problems and detecting/correcting errors.

Results Around 1500 medication sheets were reviewed/completed with dosage regimens according to weight/paediatric age group/indication, standardised administration schedules and medication alerts. Login users reviewed 50 residents, 87 doctors and 160 nurses.

There were two general sessions in the hospital and eight group training sessions for doctors (1–2 per unit/medical subspecialty). Individualised training was done on demand and not counted. A total of 110 hospitalisation beds (65 general paediatrics/31 paediatric surgery/14 ICU) were included in the EAPP and 100% of prescriptions were validated by pharmacists.

Twenty-two protocols were designed to standardise prescriptions, mainly in the paediatric surgery and onco-haematology areas. Eighty-two fixed concentration intravenous infusions were designed for prescription/administration of drugs in the ICU, detailing the preparation, conservation, stability, and dosage and administration regimens.

Conclusion and relevance The EAPP was successfully implemented in the paediatric hospital with a high degree of standardisation and validation of pharmaceutical prescriptions, which will improve patient safety and decrease medication errors. In future studies, we intend to analyse this positive effect.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Uptodate, Pediamedex, Micromedex, and Paediatric and Neonatal Prescription Manual-Taketomo CK Ed-18.

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6ER-021 DEGREE OF BURNOUT AMONG PHARMACISTS IN ISRAEL

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Background and importance The pharmacy profession has experienced significant changes in recent years. Initially the main tasks of the pharmacist were medicinal preparation, but more recently it involves logistical, clinical and regulatory tasks. Currently, Israeli pharmacists work under increasing workload pressures due to an increase in the ageing population and an increase in drug consumption and regulations. We used a sample of 242 pharmacists to measure the degree of burnout with respect to their working environments and demographic backgrounds.

Aim and objectives To examine the degree of burnout among pharmacists, an issue that has not been studied with respect to the professional transformation that has occurred in the recent decade.

Material and methods The research questionnaire was published in Google Forms, an online survey administration application, and distributed using the social media network. Overall, 242 pharmacists participated in the survey. The questionnaire was based on the MBI-Maslach Burnout Inventory, which is a burnout index that relates to three aspects: depersonalisation, emotional and personal accomplishment. Data analysis was done using ANOVA in Microsoft Excel. A p value <0.1 was considered a statistically significant difference.

Results Substantial lack of professional satisfaction was indicated by the fact less than 50% of pharmacists expressed satisfaction for any of the questions in the questionnaire and 76.8% of pharmacist would not recommend pursuing this profession to a relative. A high burnout index was found among pharmacists who worked in shifts. The Israeli Arab sector expressed the highest burnout index for every parameter.

Conclusion and relevance This preliminary study, although a small sample size, strongly suggests that pharmacists in Israel

have a high burnout index according to the Maslach scale. Future studies are required to better quantify the burnout status and prevalence, in addition to propositions that could potentially confront the modern challenges of pharmacy as a career.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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6ER-022 PERCEPTION OF RARE DISEASES AND ORPHAN MEDICINES

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Background and importance In recent years, there has been a notable increase in awareness about rare diseases (RDs) and interest in research and development of orphan medicines (OMs).

Aim and objectives The aim of this project was to assess knowledge, perception and experiences of the public and healthcare professionals (HCPs) regarding RDs and OMs, such as accessibility of OMs.

Material and methods Two questionnaires were developed and validated. The public questionnaire was shared on social media platforms. The questionnaire for HCPs was distributed to different pharmacies and clinics in all districts of Malta and uploaded online. An anonymous random sample of 50 patients with RDs were recruited to complete the questionnaire via the National Alliance for Rare Diseases Support Malta (NARDSM).

Results A total of 229 people completed the public questionnaire. Respondents were aged 18–77 years and 28 respondents were patients with RDs.

- 5 of 28 patients faced problems when accessing OMs.
- 85 of 229 respondents knew or were related to someone with an RD.
- 143 of 229 respondents were aware of the RDs organisations.
- 223 respondents desired more awareness of RDs.

73 HCPs completed the questionnaire, including 62 pharmacists, 8 general practitioners and 3 community nurses. Respondents' years of practice varied from 1 to 36 years.

- 39 respondents had encountered a patient with an RD at a point in their career.
- 56 respondents identified the definition for RD as 'A disease that affects 1 in 2000 patients in the EU'.
- 47 respondents wished to see the ORPHA code system being used in hospitals.
- 23 respondents agreed that these drugs should benefit from the same incentives that OMs do.

Conclusion and relevance The fact that 18% of patients with RDs had problems in accessibility shows there is need to improve the accessibility of OMs. Although awareness of the RD organisations was significant (62%), RD organisations should try to achieve greater awareness. Lack of awareness of RDs perceived by 97% of respondents indicates that HCPs, such as pharmacists, have a role to play to increase awareness. As regards HCPs, a significant suggestion was to include the ORPHA code in hospitals (64%).