JOINING THE PROFESSIONAL DOCTORATE IN PHARMACY

UNIVERSITY OF MALTA
L-Università ta' Malta

Want to develop your skills in advanced clinical pharmacy? Interested in furthering your studies at a Doctorate level? Then consider joining the Professional Doctorate in Pharmacy!

UIC UNIVERSITY OF ILLINOIS AT CHICAGO

What is the Pharm D course?

The Pharm D programme is a new course being offered by the Department of Pharmacy of the **University of Malta** in collaboration with the College of Pharmacy at the **University of Illinois at Chicago** in Chicago, USA. This course was developed to provide for the rapidly growing niche area in pharmacy related to a professional doctorate. It is a means to develop professionals with a research-oriented approach and with skills in advanced clinical pharmacy practice.
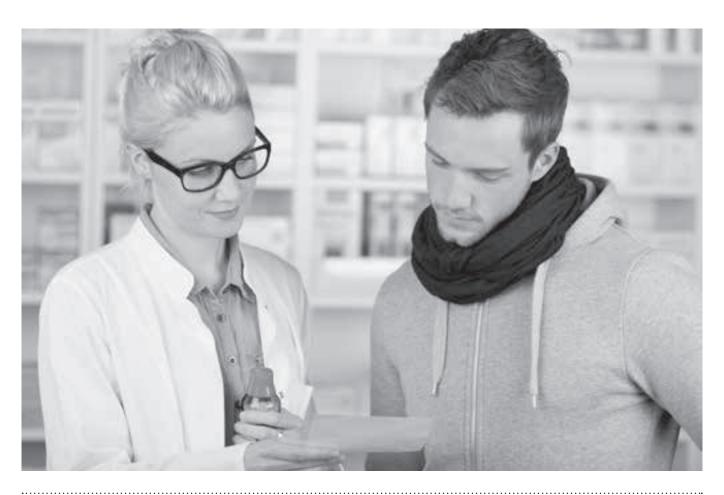
Pharmacists who would like to take up the area of clinical pharmacy as their specialisation will be able to develop the skills and attributes of undertaking research in the field while reading for a level 8 doctorate-level degree.

This course will prepare graduates who are able to deliver a significant contribution to pharmacy practice and policies in clinical pharmacy and applied areas.

Course Details

- The programme is delivered using a blended learning model that includes lectures, distance-learning and practice-based learning
- Integrate learning experience with assessment and contextualization in professional practice
- Course includes a number of taught modules as well as clinical experience and research modules
- Based over three years of study covering a total of 9 semesters
- Successful completion of 90 ECTS will entitle students to a Masters in Advanced Clinical Pharmacy if they opt not to proceed with the course

Skills Developed

- Cooperate and collaborate with healthcare professionals and patients to provide individualised treatment and support patient care
- Manage medication knowledge, mitigate errors and support decision-making based on evidence-based sources, including information technology
- Efficiently collect, analyse and apply required literature sources for the appropriate clinical management of patients
- Evaluate, analyse and synthesise information and knowledge available to undertake and propose rational decisions
- Identify opportunities for improvement of a medication-use system
- Collect and critically assess clinically relevant data to facilitate monitoring and management of drug therapy plans
- Contribute significantly to development of practice research

Career Prospects

The programme will empower pharmacists practising in the professional areas to take up leadership roles that will drive policies, developments in clinical practice and service provision which draw on a scientific and evidence base.

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PHARMACEUTICAL CARE INTERVENTIONS AT THE REHABILITATION HOSPITAL KARIN GRECH

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ABSTRACT

OBJECTIVE To record the type and number of interventions made by pharmacists, to document intervention outcome and to record physicians' acceptance of pharmacists' recommendations.

METHOD A retrospective study was undertaken to collect data about patients who received recommendations by pharmacists during their hospital stay at the Rehabilitation Hospital Karin Grech (RHKG). This study was carried out over a 12-week period. Five hundred patient profiles were selected randomly from a sample of 1500 profiles. Analysis of data was carried out using Microsoft Office Excel® 2010 and SPSS® Version 20.

KEY FINDINGS Out of 500 patients, 323 (64.6%) received pharmacist recommendations. Out of these patients, 27% were male (n=87) and 73% were female (n=236), and the average age was 80.3 years. Patients' mean number of long term medications was 8.59 with a median of 8. 'Orthopaedic' conditions were the most common reason for admission, representing almost one third of all reasons for admission (n=96, 29.7%), followed by 'cardiac' conditions (n=62, 19.1%). A total of 1069 valid recommendations were identified in this study. 'Need for additional drug' was the most common type of pharmacists' recommendation. Of the 1069 recommendations, 77% were accepted by physicians (n=823), 19.2% were not accepted (n=212) and 3.5% could not be evaluated for acceptance (n=34). Recommendations classified as 'need for monitoring' had the highest percentage of acceptance (89.9%).

CONCLUSION The goal of this study was to evaluate the recommendations made by pharmacists in the care of elderly patients. Pharmacists made many recommendations that affect the care of hospitalised patients with the majority of recommendations being accepted by physicians. The study confirms the need for the currently offered clinical pharmacy service to improve patient care.

INTRODUCTION

According to the definition by Hepler and Strand, pharmaceutical care is the responsible delivery of pharmacotherapy with a definite outcome aimed at improving the quality of life of the patient.[1] Pharmaceutical care is based on a relationship between the patient and the healthcare team, who together collaborate to optimise medication therapy and promote patient health.

The pharmaceutical care plan is a tool used by the pharmacist to provide pharmaceutical care. The plan has two main criteria; to ensure the patient is provided with pharmaceutical care as needed and to document actions the pharmacist has taken to improve delivery of pharmaceutical care.[2] The setting of this study was a rehabilitation hospital, RHKG, which is a 280-bed hospital that focuses on the treatment and rehabilitation of acute and chronic conditions in patients who are sixteen years of age and older.

The aims of the study were to evaluate and quantify the impact of pharmaceutical care interventions made by pharmacists at RHKG. The objectives were to record the type and number of interventions made by pharmacists, document the intervention outcomes and to record the physicians' acceptance of pharmacists' recommendations.

METHOD

Approval from the RHKG Research Committee and University Research Ethics Committee was granted. A comprehensive literature review relating to pharmaceutical care issues, interventions, recommendations and clinical pharmacy services was undertaken.

A pharmaceutical recommendation was identified from the patient profile documentation as any documented intervention made by pharmacists with the intent of improving patient therapy or quality of life.

A patient profile documentation form has already been standardised by the pharmacists working at RHKG. The patient profile includes: Patient demographics, reason for admission, admission date, medical and drug histories and type of recommendations.[3] There are thirteen types of recommendations that have been used in this study as outlined in Table 1.

Five hundred patient profiles were randomly chosen from a sample of 1500 profiles and a pharmaceutical recommendation was identified from the patient profile documentation as any documented intervention made by pharmacists with the intent of improving patient therapy or quality of life, including recommendations that do not directly involve patient's drug management, such as drug monitoring.[4]

RESULTS

Out of the 500 patient profiles reviewed in the study, there were 323 (64.6%) patients who had a pharmaceutical recommendation. Out of these patients, 26.9% were male (n=87) and 73.1% were female (n=236). The average age was 80.3 years. Patients' mean number of long-term medications was 8.59 with a median of 8. Orthopaedic conditions were the most common reason for admission, representing almost one third of all reasons for admission (n=96). A total of 1069 valid pharmacist recommendations were obtained. Table 2 shows the distribution of pharmacists' recommendations.

Indication	• Need for an Additional Drug: Untreated indication • Unclear or Unconfirmed Indication: Need for additional diagnostic test and review • Unnecessary Treatment: No appropriate medical indication; therapeutic or pharmacological duplication; drugs used for the treatment of avoidable adverse drug reactions (ADRs)
Effectiveness	• Improper Drug Selection: Drug not indicated for condition; more effective drug available; contraindication present • Dosage Too Low (Sub-therapeutic Dose)
Safety	• Dosage Too High (Overdose) • Risk for Adverse reaction/s: Unfavourable safety profile • Risk for Drug-Drug Interaction(s) • Need for Monitoring • Need for Counselling • Need for Seamless Care
Compliance	• Inappropriate compliance
Administration	• Wrong drug, dose, formulation and/or time or no drug administered

Table 1: Pharmaceutical Care Issues Classification at RHKG

The percentage of patients receiving a recommendation in this study was 64.6% (n=323) with a mean of 2.14 recommendations per patient.

Recommendation	Example
Need for Additional Drug (n=339) 31.7 %	*Heart failure; patient needs ACE inhibitor therapy*
Need for Monitoring (n=155) 14.5%	*Monitor liver function tests every six months in patient on amiodarone*
Dosage Too High (n=119) 11.2%	*Decrease dose of bendroflumethiazide prescribed for hypertension to 2.5mg daily (from 5mg daily)*
Risk for Adverse Reaction (n=90) 8.55%	*Change perindopril in patients with persistent dry cough to valsartan*
Dosage Too Low (n=67) 6.26%	*Change dipyridamole 25mg tds to 100mg tds*
Risk for Drug-Drug Interaction (n=38) 3.60%	*Ciprofloxacin in patient with warfarin therapy*
Counseling Need (n=38) 3.60%	*Patient on inhaler treatment*
Improper Drug Selection (n=37) 3.46%	*Sedentary patients on nitrates with hypotension*
Wrong Drug, Dose, Formulation and/or Time (n=25) 2.33%	*Change IV antibiotics to oral formulation*
Seamless Care (n=14) 1.40%	*Advising nursing home to make sure that patient takes alendronic acid with plenty of water while sitting or standing, at least 30 minutes before breakfast*
Contraindication Present (n=9) 0.84%	*Change amlodipine to ACE inhibitor in hypertensive patient with diabetes*
Inappropriate Compliance (n=6) 0.56%	*Patient is using wrong inhaler technique, in which case the pharmacist would explain how to use the device*
Unclear/Unconfirmed Indication (n=5) 0.46%	*Patient on omeprazole with no bleeding risk*

Table 2: Distribution of the Pharmacist Recommendation by Category Type

Pharmacists make many recommendations that affect the care of hospitalised patients, the most frequent of which were: 'Need for additional drug', 'Unnecessary Treatment', and 'Dosage too high'.

On follow up of the 1069 recommendations, 77% were accepted by physicians (n=823), 19.2% were not accepted (n=212) and 3.5% (n=34) could not be evaluated for acceptance. All recommendation categories had a higher likelihood of being accepted rather than rejected. Recommendations classified as 'need for monitoring' had the highest percentage of acceptance with 89.9%. The highest percentage of rejected recommendations was 'need for additional drug' with 27.7%.

DISCUSSION

This study evaluated the impact of the clinical pharmacy services at RHKG, by recording the type and number of pharmacist recommendations and the outcome. The percentage of patients receiving a recommendation in this study was 64.6% (n=323) with a mean of 2.14 recommendations per patient. This observation is in agreement with the earlier study by Vella[4] in 2009, carried out in the same setting.

By reviewing the pharmacists' recommendations documented, 'need for additional drug' was the most common intervention made by pharmacists in RHKG (31%), followed by 'need for monitoring' (14.5%) and 'dosage too high' (11.2%). These results indicate that the pharmacists' role in hospitals is very important in patients' therapy and to provide advice to other healthcare professionals on the effects of medications. Sellors et al. in 2003 reported that in a study carried out in a primary care setting, the addition of a medication is the most common recommendation.[5]

Physicians accepted advice on most of the recommendations proposed by pharmacists (77%). Possible reasons for not accepting the rejected recommendations are that a patient's medication would have been commenced by a specialist and the physician would be reluctant to override the initial prescribing decision, or the physician might not consider the recommendation a priority. In a study by Ling in 2005, to evaluate clinical pharmacist involvement in the emergency department, the pharmacist's advice was accepted in 89% of cases.[6]

Future studies could directly evaluate clinical improvement and medication effects including medication adherence or patient-relevant outcomes such as clinical status or quality of life measures arising from pharmacists' recommendations. Future work could also address cost-effectiveness of pharmacists' recommendations through assessment of specific costs associated with each recommendation. This will enable the pharmacy department to demonstrate the importance of pharmaceutical care and the financial savings pharmacists can achieve. Schumock et al in 2003 state that "For every $1 invested in clinical pharmacy services, $4 in benefit is expected."[7]

CONCLUSION

The goal of this study was to record and evaluate the recommendations made by pharmacists in RHKG. The study provided several important insights. Pharmacists make many recommendations that affect the care of hospitalised patients, the most frequent of which were: 'Need for additional drug', 'Unnecessary Treatment', and 'Dosage too high'. Physicians accepted advice on the vast majority of recommendations proposed by pharmacists.

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