



Integrated Teaching of Clinical Pharmacy among Medical and Pharmacy Students: Dream Changing to Reality

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Research Article

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Abstract

Studies had proved that cooperation between physician and pharmacist provides the patient with best health care outcome. Unfortunately, here in Kasr el-aini hospital there is a gap between doctors and pharmacists despite correlation between their studies and work. Clinical pharmacist has proved to be very helpful to physician in many hospital. Despite this fact, most of medical students in Kasr el-aini don't know the meaning of clinical pharmacy. Students in medical collage think of pharmacist as salesman. This gap leads to medical errors. It is important to study about the role of pharmacist in the process of treatment, who deal with the drug better and know more about side effect, contraindication and drug interaction? This gap between our doctors and pharmacist need to be filled to provide patients with best health care.

The aim of this study is to assess the feasibility of applying the clinical pharmacy education among Kasr El-Aini medical students as well as exploring the possible collaboration perspectives between students of both medical and pharmacy collage. Also, the study aimed to explore the team work concept among both the medical and pharmacy student after graduation. A cross-sectional descriptive study was conducted among both medical and pharmacy students. The study included 123 medical students aged from 19-24 years who agreed to participate in the study and 100 student from pharmacy collage aged from 18-25 years. A questionnaire was distributed to the study participants to explore their training experience and measure their knowledge regarding the medical system and the treatment process flow cycle. The study revealed that 60% of medical student don't know what

the clinical pharmacist is, 7% never heard about it. Also, 14% of the medical students think the pharmacist is useless. While 69% of them didn't study about the role of pharmacist in treatment process. As for the pharmacy students, 33% of them see the doctor as arrogant person and 29% see doctor ignorant about drugs. Also, 26% of pharmacy students perceive the doctor as competitor and 29% wouldn't accept that the doctor correct them if they admit an error about drug or drug reaction. The study revealed a wide gap between the medical and pharmacy students. They don't know that they are on the same side, which make them as doctors and pharmacist competitors more than one team. Need to teach them how to work as one team, how to cooperate together for providing the best medical care to the patient.

Keywords: Pharmacist - clinical pharmacy- physician /doctor-pharmacist relationship - best care

Introduction

Clinical pharmacy is the branch of Pharmacy where pharmacists provide patient care that optimizes the use of medication and promotes health, wellness, and disease prevention. Clinical pharmacists care for patients in all health care settings but the clinical pharmacy movement initially began inside hospitals and clinics. Clinical pharmacists often collaborate with physicians and other healthcare professionals. [1]

Clinical pharmacists have extensive education in the biomedical, pharmaceutical, sociobehavioral and clinical sciences. Most clinical pharmacists have a Doctor of Pharmacy (Pharm.D.) degree and many have completed one or more years of post-graduate training (e.g. a general and/or specialty pharmacy residency). Many clinical pharmacists also choose to become Board Certified through the Board of Pharmacy Specialties (BPS) which was organized in 1976 as an independent certification agency of APhA (American Pharmacists Association). A pharmacist may become a Board Certified Pharmacotherapy Specialist (BCPS), a Board Certified Oncology



Pharmacist (BCOP), Board Certified Nuclear Pharmacist (BCNP), Board Certified Nutrition Support Pharmacist (BCNSP), a Board Certified Psychiatric Pharmacist (BCPP), or a Board Certified Ambulatory Care Pharmacist (BCACP) through the Board of Pharmacy Specialties (BPS). There are also subspecialties within the Pharmacotherapy specialty: Cardiology and Infectious Disease. In order to obtain one of these specialties you must first be a Board Certified Pharmacotherapy Specialist (BCPS) and then submit a portfolio to the Board of Pharmacy Specialties for review to determine if they will grant you the added qualifications [1].

Health system is a big machine and it needs every part to work right so the patient gets the best care and outcome. From this big machine, doctors and pharmacists are the most important parts, so it is necessary that they have good collaboration between them. Historically, the pharmacist was the person who developed new drugs and prepare drugs for patients. Pharmacist was very helpful to doctor but in midway between history and present pharmacist become just salesman. In December 2008, US health resources and services administration publish report indicate that the roles of pharmacist will change as a result of aging population and the increasing complexity of medication [2]. Studies had proved that best medical care result from good team work and collaborative work between doctor and pharmacist [3-7]. Clinical pharmacy has been the best example that cooperation between doctor and pharmacist provide the patient with best medical care.

Doctors think that they knew all about treatment and no need for pharmacist, on the other hand pharmacist see doctors arrogant and don't know thing about drugs. This gap always causes medical errors [8-13].

Clinical pharmacy department is an important department in pharmacy collage in Cairo University but we still don't know how to use it in best way to improve health care system. As it is proved to be very efficient and provide best medical care for the patients in 57357 cancer children hospital, giving finest outcome which make the hospital one of the best facilities of cancer treatment [14] ***.

It is important to be cooperation between physician and clinical pharmacist in Kasr el-aini hospital. This study shows importance of working of doctor and clinical pharmacist together to provide the patient with the best medical care and more important than that is teaching medical students how to cooperate with pharmacist to reach the best degree of quality of medical care.

Material and Method

Study design and study setting:

The study is an observational cross-sectional descriptive study carried out on two groups from Kasr El Aini Faculty of Medicine- Cairo University students and a another group of Pharmacy Faculty- Cairo University students.

Sample technique and sample size:

A convenient purposive sample was carried out on a group of 123 medical students at Kasr El Aini Faculty of Medicine- Cairo University and another group of 100 pharmacy students at Pharmacy Faculty- Cairo University during the year 2011. Pharmacy students who participate were from all years, medical students were from all years except first year students.

Study tools & ethical considerations:

Two online questionnaires were prepared, one for medical student and the other for pharmacy student. The questionnaires were collected after 10 days from providing them to the study participants. The questionnaire addressed the demographic characteristics and training experience of the study groups. It also measured the knowledge of the student with medical system and how the treatment process work.

There were special sections in the Medical student questionnaire to measure the knowledge of medical student about the role of pharmacist and what is clinical pharmacy, how he the pharmacist, does the doctor trust the pharmacist and does the student study about the role of the pharmacist in treatment process.

Pharmacy student questionnaire was designed to show how pharmacist sees the doctor, does the pharmacist trust the ability of doctor to deal with drugs, and does the doctor know the role of clinical pharmacist and accept it. Both surveys were online and published to specific groups of medical students and pharmacy students who agreed to participate.

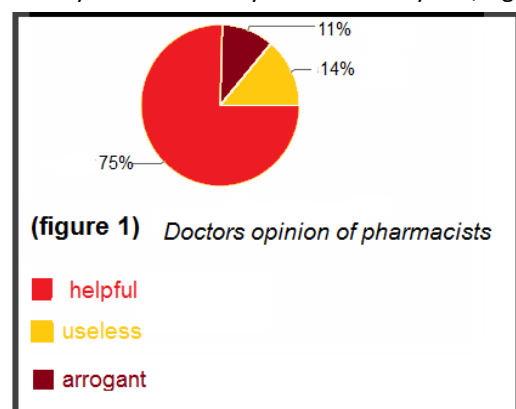
Data management and statistical analysis:

The data were entered on an excel file using an IBM compatible computer. The data were analyzed using the appropriate descriptive statistics as indicated.

Results and Discussion

123 medical student and 100 pharmacy students answered the questionnaires.

From 123 medical students, one was house officer, no students from first year, and the rest was from other years but mainly 4th and 3rd year, age was





from 19-24 years and only 47% have taken training courses in hospitals. 75% of them think that pharmacist is helpful, 11% see pharmacist as arrogant person, and 14% think that the pharmacist is useless (figure 1).

48.8% of medical students don't know the meaning of clinical pharmacy, 7.3% NEVER heard about it. 43.9% said they know it (table1), however out of those 55 students, there were 33 students who define it or understand it wrong, and only 22

Table 1: Medical student who know meaning of clinical pharmacy

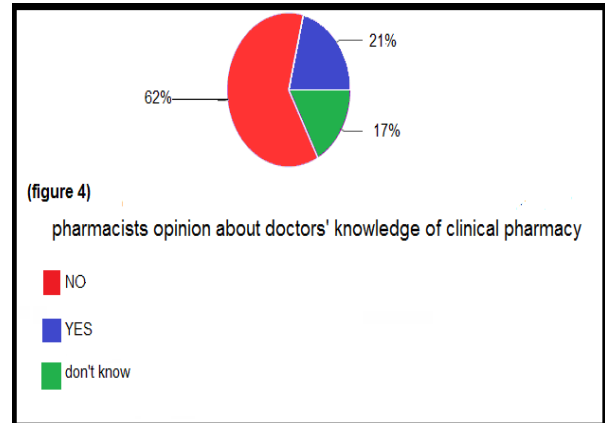
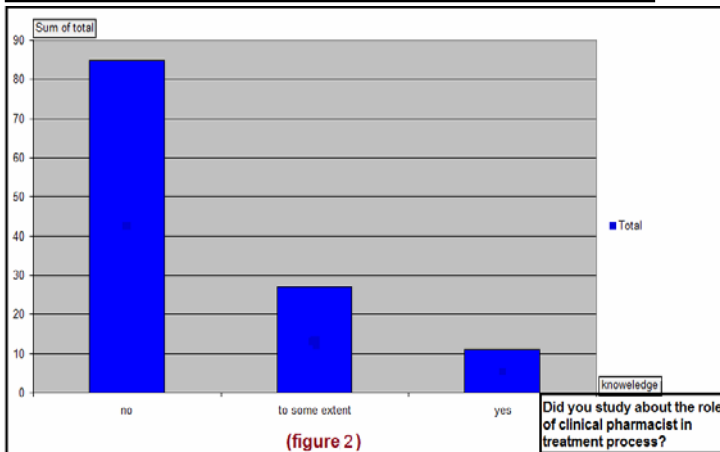
Do you know what the meaning of clinical pharmacy?	Total	%
Yes	54	43.9
No	60	48.8
Never heard about it	9	7.3
Total	123	100.0

16% see the pharmacist as competitor, but 79% don't think of him as competitor.

students define it correctly (table2).

Table 2: Correct definition of clinical pharmacy

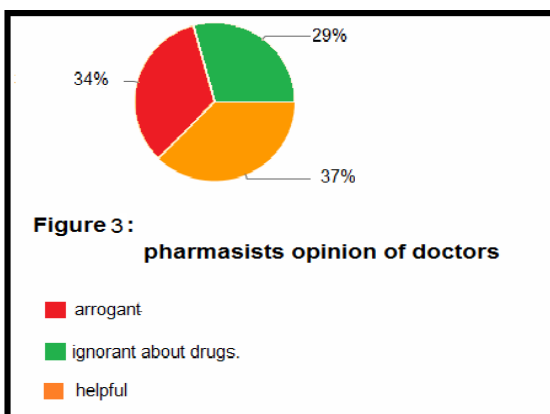
Def.	Count	No.	%
Correct definition		22	40%
Wrong definition		33	60%
Total		55	100%



39% see the pharmacist helpful in treatment, 15% think not, but 37% don't know.

69% didn't study about the role of pharmacist during their education, 22% learn to some extent, and 9% study and learn about the role of the pharmacist in treatment process (figure2). 76% think that the pharmacist should share in treatment process, 10% think that not necessary, and 19% say may be it could help.

Pharmacy students 100 have participate from all years but mostly 5th year, ages were from 18-25 years, 39% have training experience. 37% see the doctor helpful, and 29% think that doctor is ignorant about drugs (figure3).



66% trust the scientific ability of some pharmacist but not all of them, and however 19% trust the pharmacist completely, 16% don't trust the pharmacist at all. 47% accept that the pharmacist could correct them if there mistaken, 38% don't accept that.

26% see the doctor as competitor, 65% think not. 67% trust scientific ability of some doctors, 19% don't trust doctors and 14% trust all doctors. 65% accept correction about their mistakes from doctors, 29% don't accept that. 62% think that doctors don't know the meaning of clinical pharmacy, 17% think they do know (figure4). 45% think that doctors don't accept their role as clinical pharmacist, 15% think that doctors accept their role, and 40% think that some not all doctors accept their role as clinical pharmacist.



76% think that it's important that doctors share in patient education, 5% think not important, and 19% think that doctors can share to some extent.

Discussion

Up to my knowledge this is the first study to discuss application of clinical pharmacy in medical school of Kasr el-aini, and the integration between medical and pharmacy student. The result confirms that there is wide gap between medical students and pharmacy students which result in medical errors later which affect health care system. 69% from medical students didn't study about the role of pharmacist in treatment process. 14% of them think that pharmacist is useless. On the other hand, pharmacy student think of doctors as competitors and ignorant about drugs.

..... (Before Sep-1997, Responsibilities of pharmacists working in Egyptian hospitals were mainly dispensing drugs to patients as prescribed by their physicians-) [14].

The start of clinical pharmacy practice was begun in a small unit in the fifth floor of the inpatient of the pediatric department at National Cancer Institute (NCI) which proved the importance of clinical pharmacy not only in terms of financial benefits but also the great advancement in treatment of cancer. Dr Abo-Elnaga, established a team of clinical pharmacist, the first pharmacist joined the clinical pharmacy team, was pharmacist (Doris Eskandr).

He knew that dispensing and preparation of cytotoxic drugs must be according to standards that were put for that (14). Clinical pharmacy department start in Cairo University –pharmacy collage in 2006 and from then the minister of health trying to put clinical pharmacists in every hospital, however there is gap between medical and pharmacy student and no collaboration between them. As result shows it is vital need to improve communication and integration between medical and pharmacy students before those doctors walk into reality life and become responsible for lives of patients how to work with each other on professional level and present their best to get the finest outcome.

This gap between students developed in the future between them as doctor and pharmacist leading to medical errors that could be fatal and could cause death of the patient. Both sides don't get that they are one team playing on the same side, have the same goal which is reaching the best medical care and achieving the quality level the patient need from the hospital and the entire health system.

Of course this study doesn't represent all doctors and pharmacist, but it show that we need to improve relationship and teamwork among our entire student in health and medical system.

Limitations: In this study, there is pharmacy students less than medical student who agreed to participate in online survey, 100 pharmacy student and 123 medical student. All participating are student not graduate because it is difficult to collect graduate who study and work in Kasr al-aini hospital. But this way we could have larger sample size. Future studies with larger sample size and among other groups could show better results.

Conclusion

Findings show that there is no collaboration between pharmacy student and medical student, they still don't see how they are on the same side and work as one engine in medical system. There is wide gap between medical student and pharmacy student make them as doctors and pharmacist competitors more than one team. It is an urgent need to teach them how to work as one team, how to cooperate together for providing the best medical care to the patient and have the best outcome in treatment process.

Recommendations

- Workshop between faculty of medicine and faculty of pharmacy to educate students and encourage co-operation between them
- Professional meetings between staffs of both faculties to work on integration between our future doctors and pharmacists and how to provide the patient with best care and reach the best outcome.
- Teaching both sides that they are one team through shared activities and lectures about dealing with patient
- Shared assignment during study course between both sides could help them learning team-work.

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AUTHORS' CONTRIBUTIONS

Authors contributed equally to all aspects of the study.

PEER REVIEW

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CONFLICTS OF INTEREST

The authors declare that they have no competing interests.