

Kasr El-aini Parasitology Department, “New Educational Experiment”

Doaa M. Hasan

6th year medical student, kasr el-aini faculty of medicine, Cairo University.

Abstract: Background: Medical parasitology is One of the largest fields in parasitology, medical parasitology is the subject which deals with the parasites that infect humans, the diseases caused by them, clinical picture and the response generated by humans against them. It is also concerned with the various methods of their diagnosis, treatment and finally their prevention & control. A parasite is an organism that lives on or within another organism called the host. These include organisms such as: *Plasmodium spp.*, the protozoan parasite which causes malaria. Medical students have to pass a specific course in medical parasitology to complete the academic stage and start their clinical years. Objective: The aim of this study is to assess the performance of parasitology department, the progress of learning strategies in the department and knowledge obtained by student after passing the course. Also highlight the methods of learning used by the department to enhance its performance to recommend these methods for other departments. Doctors have the duty to keep their skills and knowledge up-to-date. Practicing clinicians often spend a considerable amount of time undertaking courses, conferences, workshops, journal clubs and reading relevant literature and clinical guidelines. Methods: Study design and study setting: The study is an observational cross-sectional descriptive study conducted on third, fourth and fifth year students from Kasr El Aini Faculty of Medicine- Cairo University. Sample technique and sample size: All year 3, 4, and 5 medical students who study parasitology course under supervision of the same head of department were eligible to participate. Results: 130 students from 3rd year, 298 students from 4th and 38 students from 5th year students. Students aged between 19-24 years old and average age is 20.95. When asked about theoretical content of parasitology course, 86.7% of the students thought it is appropriate, 12% thought it was too much and 1.3% thought it is insufficient course. Conclusion: Results of the new approach used in the department were outstanding. Good knowledge gained by the students making the department capable of graduating better doctors for the future. It is the experiment to be applied.

Keywords: Medical education / Learning methods / parasitology / Professor / medical collage /research / medical field.

1. Introduction

Parasitology is the study of parasites, their hosts, and the relationship between them. As a biological discipline, the scope of parasitology is not determined by the organism or environment in question, but by their way of life (9). This means it forms a synthesis of other disciplines, and draws on techniques from fields such as cell biology, bioinformatics, biochemistry, molecular biology, immunology, genetics, evolution and ecology.

Medical parasitology is One of the largest fields in parasitology, medical parasitology is the subject which deals with the parasites that infect humans, the diseases caused by them, clinical picture and the response generated by humans against them. It is also concerned with the various methods of their diagnosis, treatment and finally their prevention & control. A parasite is an organism that lives on or within another organism called the host. These include organisms such as: *Plasmodium spp.*, the protozoan parasite which causes malaria.

Medical students have to pass a specific course in medical parasitology to complete the academic stage and start their clinical years. This course aims to provide core training in the theoretical and practical aspects of medical parasitology, covering the protozoan and metazoan parasites of humans and the vectors which transmit them, and equip students with specialized skills to enable them to pursue a career as G.P (*general practitioner*).

Recently, learning systems has developed in many fields and it is important that every department cope with this development and enhance its performance and develop

research work to cope with increased importance of evidence-based-medicine.

Education of undergraduate medical students can be enhanced through the use of computer assisted learning and use of other ways to enhance performance of the department and knowledge that students obtain.

Doctors have the duty to keep their skills and knowledge up-to-date. Practicing clinicians often spend a considerable amount of time undertaking courses, conferences, workshops, journal clubs and reading relevant literature and clinical guidelines(3).

Parasitology department in kasr el-aini faculty of medicine is one of the best in Egypt. Recently, there was new experiment applied in this department to improve learning and develop the quality of the department as whole.

2. Methods

2.1 Study Design and Study Setting

The study is an observational cross-sectional descriptive study conducted on third, fourth and fifth year students from **Kasr El Aini Faculty of Medicine- Cairo University**.

2.2 Sample Technique and Sample Size

All year 3, 4, and 5 medical students who study parasitology course under supervision of the same head of department were eligible to participate. Fourth and fifth year students were perfect to assess the knowledge they gain and how much they remember and can use in their clinical skills. A

convenient purposive sample was carried out on a group of 466 medical students at Kasr El Aini Faculty of Medicine-Cairo University during the year 2013.

2.3 Study Tools & Ethical Considerations

A suitable questionnaire was prepared, and was collected after 10 days from providing them to the study participants. The questionnaire addressed the demographic characteristics and methods of teaching in the parasitology department. It also asked about lab equipments, theoretical and practical content. Also time allocated for the course and the way the faculty members in this department treat the student. A specific question was asked about the head of department performance, the theoretical content of parasitology course and its specification , time allocated for this course and using of multiple teaching methods

There were special sections to measure the knowledge of medical student about medical parasitology and what general practitioner needs to know to obtain right diagnosis if needed in these cases. Those questions were chosen by parasitology department and it covered the clinical aspects of medical parasitology which GP need.

2.4 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.

2.5 Results

Out of 500 eligible students, 466 students (93%) agreed to participate in the study.

130 students from 3rd year, 298 students from 4th and 38 students from 5th year students. Students aged between 19-24 years old and average age is 20.95.

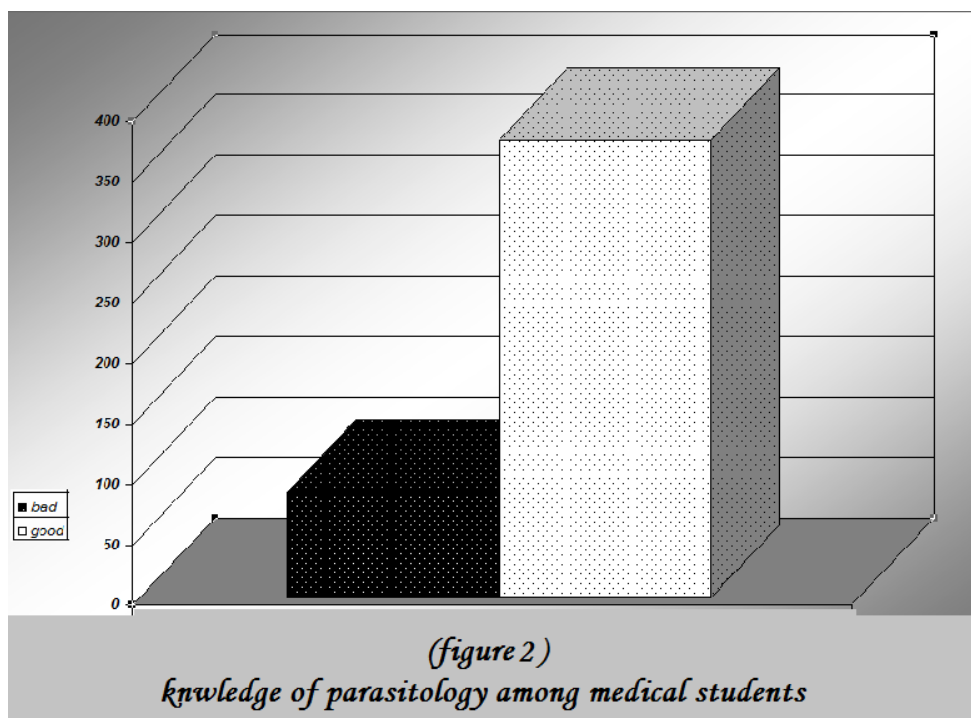
When asked about theoretical content of parasitology course, 86.7% of the students thought it is appropriate, 12% thought it was too much and 1.3% thought it is insufficient course (figure1).

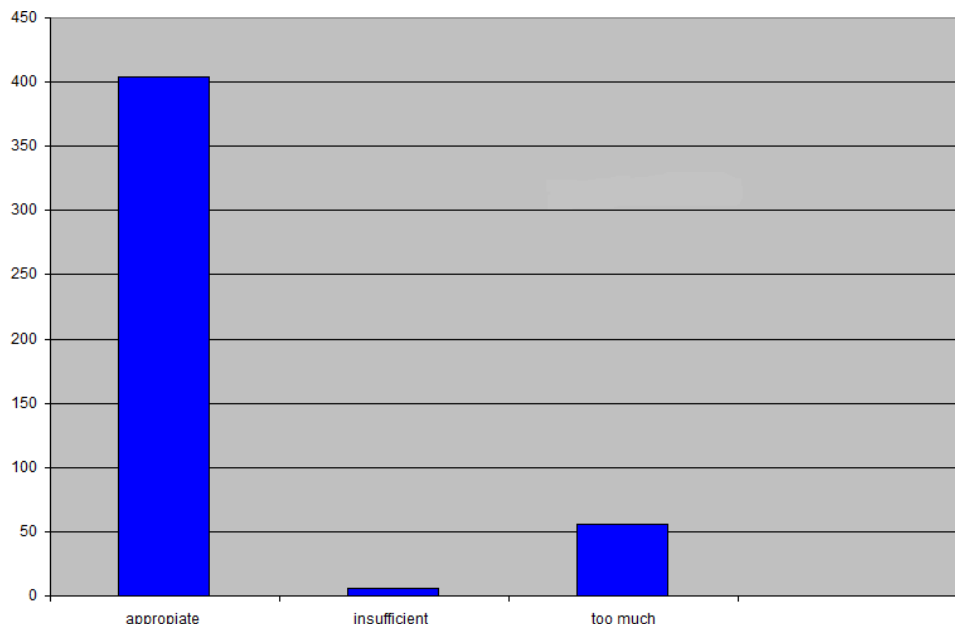
About time allocated for its study, 85.4% thought it was appropriate, 8.8% of students thought it were insufficient and 5.8% said it was too much.

To 65.8% objectives of the class were clear, 29.6% thought they were clear to some extent and 4.6% didn't know these objects. 50% said the practical labs were well equipped, 45% thought they were to some extent and 5% said they were not well equipped. The materials used in practical classes were of good quality according to 49.1% of students, 4.1% did not agree with them and 46.8% said they were good to some extent. 57.5% of students participate actively in practical classes, 10.1% didn't participate and 32.4% participate to some extent.

Table 1: using of multiple teaching methods

	yes	%	To some extent	%	No	%	Total	%
Using of multiple teaching methods	228	49%	192	41.2%	46	9.8%	466	100%





(figure 1) The theoretical content of parasitology course

50% said the practical labs were well equipped, 45% thought they were to some extent and 5% said they were not well equipped. The materials used in practical classes were of good quality according to 49.1% of students, 4.1% did not agree with them and 46.8% said they were good to some extent.

57.5% of students participate actively in practical classes, 10.1% didn't participate and 32.4% participate to some extent.

According to 49% of students, professors use multiple teaching methods, 9.8% said no and 41.2% said to some extent (table1). When asked about knowledge of their course specification, 46.5% of students knew, 12.2% did not know the specification and 41.3% knew to some extent (table2).

	Yes	%	To some extent	%	No	%	Total	%
course specification knowledge	217	46.5%	192	41.3%	57	12.2%	466	100%

Asking about treatment of faculty members in this department answers came as: 83% yes, 15.2% to some extent and 1.8% no. 45% of those students could express complaint and receive feedback always, 48% sometimes could and 6.9% never express complaint and receive feedback. The test results for knowledge were 81.9% good knowledge and 18.1% bad knowledge (figure2). As for the performance of the head of department, 94.2 thought it was excellent and 5.8% sought she is good. Zero percent for the choice bad.

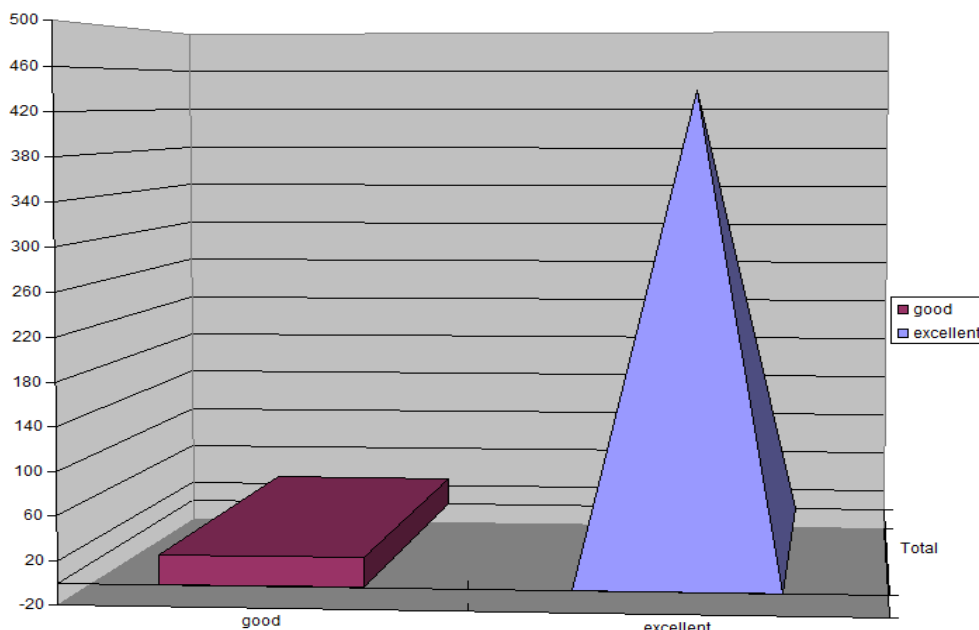


figure 3: performance of the head of the department

3. Discussion

Up to my knowledge this is the first study to discuss improvement of learning process in parasitology department in Kasr el-Aini Medical College.

Results confirm that there is development in learning process better communication between students and the department. 81.9% of students have good knowledge, suggesting improving of teaching methods and the amount of information and knowledge gained by students.

83% of the students said that the faculty members treat them with respect, this proves better communication between students and this department.

The head of the department is Dr. Azza El-Adway (Figure 4) from 2011-2013 and she adopted new ways trying to improve learning process, communication between students and the department, equipped the practical labs with the best materials to help students.

She started a project for the students to help them learn evidence-based medicine, students divided into groups and asked to choose either to do a case report or a research project, either choice they took, there will be a professor helping them to learn how to do it right.

As for the learning process, students used to listen to the lecture and go home, now they get pre-class assessment and post-class assessment, meanwhile there is a doctor who takes these data and evaluates the learning process and checks if there is a problem that needs to be solved. Every group contains 40 students in every practical group and those groups are divided into sub-groups for research assignments.



figure 5

Practical labs include activities for bonus marks such as drawing of parasites and performing presentations for other students or quizzes taken as practice for the final exams. The parasitology department arranges integrated lectures with pediatric, tropical and internal medicine departments which allow the students to know the clinical application of medical parasitology, working with professors from those departments and having the chance to present their work in the integrated lecture in the presence of the dean and the professors from all departments. To encourage students to participate in all activities of the department, there are prizes for them from the department and the college.

The department's labs were renewed and updated with new equipment and better microscopes with whole new slides for the undergraduate students (Figure 5).



Dr/Azza El-adway

head of the parasitology department

- Investigator in the Schistosomiasis Research Project: The subject of the project was "Optimization and standardization of a diagnostic test for active
- won the State's Encouragement Award in Medical Sciences from the Academy of Scientific Research and Technology in 1997.

Figure 4:

At the end of every chapter, students take round in the hospital watching cases that infected with parasites they studied and watch the clinical presentation of the disease along with the investigation done for the patient and how the physician manage the case and treat the patient.

As for the final exams, questions become objective and problem solving instead of long essay questions that depend on memorizing information from the book.

The department also updates their textbook, more information and pictures and prepares C.D along with the book that contains pictures for whole slides in the curriculum and animation about life cycles of the parasites. The grand lectures and mini lectures concentrate on information the student need to use as a G.P, diagnosing the condition caused by the parasite, and ended with quiz for assessment of their gained knowledge from the lecture. This experiment with the parasitology department proved to be very successful.

The success rates has been reported to be good with outstanding feedback from students, both under graduate and post graduate, resulting in new researches added to the faculty share of academic and scientific research.

4. Conclusion

Results showed that there is excellent improvement in the department's learning process and communication with the students. Good knowledge gained by the students making the department capable of graduating better doctors for the future.

The parasitology department becomes the rising star in the collage.

Excellent performance of parasitology department, the progress of learning strategies in the department is very good and knowledge obtained by student after passing the course is excellent. It will be excellent strategy by the collage to apply the same experiment in other departments to improving learning systems and develop kasr el-aini medical collage to reach the best quality of the learning process.

It is the experiment to be applied.

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