

RESEARCH ARTICLE

THE EVALUATION OF THE LEARNING BY CLINICAL REASONING AMONG STUDENTS OF 3RD YEAR OF MEDICINE- FACULTY OF MEDICINE AND PHARMACY OF MARRAKESH

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Manuscript Info

Abstract

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Key words:-

Clinical Reasoning Learning, Evaluation, Medecine Student, Hospital Internship Clinical reasoning learning (CRA) is a teaching method based on interactive teaching. Its objective is to lead the student to acquire a diagnostic approach by developing a clinical reasoning. In order to evaluate this method of active teaching from the point of view of the medical student, we carried out a cross-sectional descriptive study among students of the 3rd year of medicine of the faculty of medicine and pharmacy of Marrakesh, having held out-patient clinics at the Mohamed VI university hospital in Marrakesh or at Ibn Sina Military Hospital and attended at least two CRA sessions during their day school curriculum. Data were collected during the last week of July 2016, via a quiz. One hundred and forty-two quiz were operated with a participation rate of 95%. Students reported that CRA sessions are interesting but insufficient. The CRA sessions had a very important place in medical education for 84% of our students and they had brought medical knowledge to the majority. The clinical reasoning learning made it possible to apply the theoretical knowledge acquired during the medical studies for 62% students and allowed to acquire medical skills for 95%. It turns out that the CRA is a teaching method which is appreciated by students and which is an interesting complement to the traditional forms of teaching.

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Introduction:-

Clinical reasoning (CR) is defined as a set of thought and decision-making processes that allow the clinician to choose the most appropriate actions in a specific context of health problem solving [6]. It can be considered as the intellectual activity which synthesizes the information obtained from the clinical situation, which integrates it with previous knowledge and experiences and uses it to make decisions about the diagnosis and management of the patient [5].

CRA is an alternative to traditional forms of teaching. Its objective is to lead the student to acquire a relevant diagnostic approach by developing clinical reasoning [10].

Corresponding Author:- F. Ihbibane Adress: - Department of infectious Diseases, Mohammed VI University Hospital, Cadi Ayyad University, Marrakesh, Morocco So many faculties have introduced learning activities aimed at improving clinical reasoning for medical students such as CRA sessions [4]. This is the case with our faculty of Medicine and pharmacy of Marrakesh; which began to integrate this teaching method into the educational system since 2015. In order to facilitate the assimilation of this teaching method, seminars and educational training workshops on CRA were organized for the benefit of the teachers of the faculty.

The majority of hospital departments have started to apply this method of teaching to internship students.

In fact, in addition to clinical internships, these sessions facilitate the development of their clinical reasoning for students. During each session, which ideally brings together 4 to 6 students and an "expert" teacher who is the monitor, a clinical situation simulating the consultation of a patient with a doctor is recreated. The emphasis is on the early genesis and evaluation of diagnostic hypotheses, but above all on the active and oriented reconstruction of clinical data. All these steps are verbalized in the presence of the monitor [14].

The research in medical education has developed around CR and the literature provides recommendations for its training. Some relate to learning CR [9,13,3]; others relate to its evaluation [5].

In the recent years, this learning method has proven to be very effective in terms of student outcomes, but few studies have been conducted to assess students' perceptions of this type of learning.

The target of this work is to assess whether the 3rd year medical students thought they would acquire skills because of CRA sessions, they had received during their clerkship course and therefore the interest of this method teaching from the student's perspective.

Materials And Methods:-

This is a cross-sectional descriptive study, an evaluation of the CRA carried out among 3rd year students of the faculty of medicine and pharmacy of Marrakesh having completed internship at the Mohamed VI University hospital in Marrakesh or at Ibn Sina military hospital and having benefited from at least two CRA sessions during their externship course.

The total number of 3rd year students of the faculty of medicine and pharmacy of Marrakesh was 342 in 2016.

Our study took place during the last week of July 2016, in the form of a survey carried out using a quiz based on data from the literature mainly and respecting anonymity. The quiz was distributed either directly to 3rd year students or through correspondents in its services. Data collection took place over a period of one week. The various items studied mainly relate to knowledge concerning attendance at courses delivered by the faculty during the clerkship, data on CRA, and student evaluation of CRA sessions received at the service.

One hundred and fortynine quiz were distributed to different medical and surgical departments. Pediatric and gynecological services were excluded as there is no internship site for 3rd year students. Incompletely completed forms were excluded.

The initial data entry was performed on Microsoft Excel software. Their validation and analysis were carried out using SPSS version 16.0 software at the community medicine and epidemiology department of the Marrakesh faculty of medicine and pharmacy.

Results:-

We distributed 149 quiz which we all collected. One hundred and forty two quiz were used with a participation rate of 95%. Ninety-two (65%) respondents were female. The average age of the students was 20.3 years with ranges of (20-25 years). The students interviewed came from the different medical and surgical departments of the Mohamed VI University hospital and Ibn Sina military hospital. Seventy (49.6%) students surveyed considered the surgical specialty as a future discipline.Seventy-nine (56%) students attended lectures of which only 11 students (8%) attended very regularly and 97 (68%) students said they attended tutorials (TD) of which 46 (32.6%) students attended very regularly.

For our interviewed students, the minimum number of CRA sessions they attended was 2 (30 (21%) students) and the maximum number was 10 (8 (6%) students). The average number of CRA sessions was 6. The number of CRA sessions received was not at all sufficient for 40 (28%) students (Figure 1). In correlation with the number of CRA sessions received, the satisfaction rating was sufficient starting with a number of at least 4. Students reported that the CRA sessions were interesting but not enough in their opinion.

During the CRA session, 80 (56%) students felt they were active; 2 (1%) only rather passive; 85 (60%) were interested; 23 (16%) felt self-confident; and 10 (7%) students reported feeling intimidated and stressed.

Regarding the conduct of the CRA sessions, 119 students (84%) found that the interaction was more effective when the session facilitator was a senior, 119 (84%) students, considered that the CRA sessions had a very important place in medical education (figure 2).

One hundred and thirty-nine (98.6%) students said that these sessions provided them with medical knowledge and 88 (62%) strongly agreed that they made it possible to apply theoretical knowledge acquired during medical studies.

The CRA would certainly help in the management of the relationship with the patient for 85 (60%) students, would certainly have an interest in the structure of the patient interview for 85 (60.5%) respondents and in the synthesis of diagnostic hypotheses for 77 (55%) and enabled the acquisition of medical skills for 133 (95%).

In response to the open question through which we wanted to know how teaching by CRA allowed students to progress in their knowledge as a future doctor, students came up with ideas showing that the CRA made it possible for them to:

Active teaching through interactive sessions; confrontation with real clinical cases: living the reality of a clinical situation (CRA allowed us to really get into "the bath"); the application of knowledge acquired during lectures and tutorials in order to achieve a diagnosis and better patient care; the acquisition of reflexes that no other means would have provided for a 3rd year student; conduct a structured questioning in everyday language; conduct a diagnostic discussion and suggest appropriate additional examinations while retaining or eliminating diagnoses as the results of these diagnostic investigations are obtained; improving the doctor-patient relationship; the acquisition of self-confidence; the management of stress towards the patient. Our students also suggested involving residents and interns after their training in CRA sessions to make up for the shortage of teaching staff in some departments.

Discussion:-

The participation rate for our survey was 95%, which is a significant number. According to the results of our study, we find that 92 (65%) respondents were female, which provides information on the feminization of medical promotions observed even at the international level [10]. The majority of our students considered, as a first choice a surgical specialty as a future discipline while only 10 (7%) students chose general medicine which reflects the willingness of the students to advance and deepen in medical studies.

Regarding the courses delivered by the faculty, our students interviewed were more assiduous to the tutorials. Indeed, 97 (68%) students affirmed to attend the tutorials of which 46 (32.6%) attended them on a regular basis; while 21 (15%) have never attended lectures. This finding reflects the interest of students in interactive teaching methods, which was also reported during the Laribi survey [10].

Indeed, the CR is located at the center of medical and nursing practice. Learning it is not always easy in initial training [7]. CR training now has data from medical education research and the literature provides many recommendations for training future practitioners. These recommendations are part of a global approach to improving practices and propose educational strategies.

Regarding this teaching method newly integrated in our faculty, 40 (28%) students interviewed, estimated that the number of CRA sessions received during their externship was not at all sufficient, which explains the interest of the students to this active method of teaching.

The majority suggested an increase in the number of CRA sessions even at the expense of courses received in hospital. CRA is more useful than these courses from the perspective of the students interviewed; This was also

reported by the results of the Laribi survey [10] which showed that students felt that CRA type courses were clearly insufficient in terms of quantity during their university studies.

In addition, according to our study, the degree of student satisfaction depended on the number of CRA sessions received since 20% of respondents who felt that this number was sufficient had received at least four sessions. Our students expressed their feelings during the CRA sessions by being active and interested in 56% and 60% of cases, respectively; with a more effective interaction when the CRA facilitator is a senior doctor for 119 (86%) of the respondents, which was also observed in the Laribi survey [10]: the students were more sensitive to the sessions led by senior doctors than interns and residents.

This result could lead us to think that these sessions are considered as an alternative to theoretical learning. This also raises the importance of the quality of the instructor's intervention during the session, which is an important point reported by Rondet [14]. We therefore join the students who suggested the training of resident and intern doctors in the CRA for better care of students on internship.

Indeed; intentional and consciously oriented learning engagement on the part of the student as well as the supervision and use of the explicit role model on the part of the clinical teacher, constitute potentially powerful but often under-exploited levers for learning in clinical training.

To overcome these limitations, the pedagogical training of clinical teachers will be necessary. Teaching problemsolving in action requires clinicians to have additional skills to their clinical expertise, which is itself highly automated at this stage, in this case that of being able to explain one's knowledge and actions, to articulate them, to explain them, criticize them or even correct them [2].

According to our results, the majority of students (84%) report that CRA sessions have a very important place in medical education against 89.9% in Rondet's study [14] who found that the atmosphere and workload requested by the CRA were manageable. These sessions provided medical knowledge for 98.6% of the students, the same observation for Laribi (95%) [10].

Learning the reasoning processes alone is not effective if it is not accompanied by the simultaneous acquisition of the specific knowledge needed to solve a clinical problem. To help the development of clinical reasoning processes, it is necessary to promote the connection between the students' theoretical and clinical knowledge [13]. This notion was reported by 88 (62%) of our students who felt that CRA enabled them to apply their theoretical knowledge.

The CRA would certainly help in the management of the relationship with the patient for 60% of the students and would certainly have an interest in the structure of the patient interview for 60.5% of the respondents and in the synthesis of the diagnostic hypotheses for 55%. Our results align with one of the primary goals of CRA sessions, which is to facilitate learning of medical information. A second major objective is to improve the techniques of the clinical examination of patients, the synthesis of diagnostic hypotheses and the strategy for prescribing additional examinations. Our results also showed that these objectives were validated by the students interviewed in accordance with the data in the literature: an Australian study [1] highlighted the interest of CRA workshops in the training of students in medicine. A second study [15] revealed the benefit of CRA in the oral presentation of a clinical examination by students. It was noted a better synthesis of the diagnostic hypotheses and a greater ease in the presentation of the clinical case.

The evaluation of CR was higher in the students who benefited from CRA sessions [10,12], Chamberland had shown that at the end of a 10 weeks and half of clinical medical internship at the clerkship with sessions of CRA (21 sessions at the rate of 2 sessions of 90 minute per week), the students substantially improved their clinical reasoning in terms of general strategies as well as specific knowledge. They also used these new findings in a clinical situation with patients [4].

It appears that this teaching method seems very appreciated by the students questioned, since 133 (95%) respondents thought they would acquire medical skills because of the CRA sessions, which was also reported by Rondet (67.6%) [14].

In the literature, according to two recent systematic reviews [8,11], an early immersion of students in a clinical environment helps them to integrate into the medical world, to understand the social values of the profession and the care network and to contextualize the knowledge. This was also expressed by our students who reported that CRA allowed them to integrate into the reality of the patient's clinical situation.

Conclusion:-

Our study showed the interest of CRA sessions for 3rd year medical students and joined previous studies. This form of education must occupy an important place in medical training in addition to lectures and tutorials and must therefore be developed systematically within the framework of medical studies.

Our results open up several avenues of research, including the evaluation of the medical skills acquired by internship students after having received the CRA sessions and their application to patients in order to assess the impact of this active teaching on patient care load and the future of the patient.

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Figure 2:- The degree of satisfaction with the number of CRA sessions received



Figure 3:- CRA's interest in medical training

Conflicts of Interest: None.

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