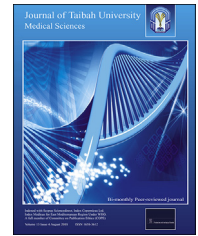




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Original Article

## Challenges faced by medical students during their first clerkship training: A cross-sectional study from a medical school in the Middle East



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### المخلص

**أهداف البحث:** يتميّز الانتقال من التدريب ما قبل السريري إلى التدريب السريري بعدد من التحديات التي تتراوح بين الأدوار الجديدة، مع ما يرتبط بها من مهام، إلى البيئة غير المألوفة. كان الهدف من هذه الدراسة هو استكشاف الصعوبات التي يواجهها طلاب الطب أثناء الانتقال من التدريب ما قبل السريري إلى التدريب السريري في منطقة الشرق الأوسط.

**طرق البحث:** أجريت هذه الدراسة المستعرضة على طلاب السنة الرابعة طب في نهاية عامهم التدريبي الأول. حيث أُعطى المشاركين استبانة ذاتية التعبئة تحتوي على جوانب مختلفة مما يعتبره الطلاب إعدادا مجهدا إضافة إلى الإشراف السريري.

**النتائج:** أجاب 63 من بين الـ 89 طالبا (معدل استجابة 71٪). وعبر ما يقارب نصف الطلاب (59٪) عن قلقهم من بداية تدريبهم السريري، في حين اعتقد 33٪ أنهم مستعدون لبدء تدريبهم السريري. غالبية الطلاب (81٪) أعربوا عن حاجتهم إلى مزيد من الوقت للتكيف مع البيئة الجديدة وأشار 84٪ إلى أن مقبلة توعية جيدة قبل بدء التدريب السريري ستجعل الانتقال سهلا بالنسبة لهم. كما أبلغ حوالي نصف الطلاب (54٪) عن تلقيهم تغذية راجعة أثناء التدريب السريري.

**الاستنتاجات:** ألفت هذه الدراسة الضوء على الصعوبات التي تواجه طلاب الطب خلال الانتقال من التدريب ما قبل السريري إلى التدريب السريري. هناك حاجة لفرض تدابير لتسهيل الانتقال من خلال التوجيه التوعوي المنظم حول التدريب العملي لكل من الطلاب وأعضاء هيئة التدريس في الأقسام السريرية.

إضافة إلى ذلك يُنصح بتنظيم ورش عمل لتطوير أعضاء هيئة التدريس حول التغذية الراجعة والإشراف.

**الكلمات المفتاحية:** التدريب السريري؛ المنهج الطبي؛ السريري؛ قبل السريري؛ برنامج تطوير أعضاء هيئة التدريس

### Abstract

**Objectives:** The transition from preclinical to clinical training is characterized by several challenging experiences ranging from new roles, with their associated tasks, to unfamiliar settings. The aim of this study was to explore the difficulties faced by medical students during the transition from preclinical to clinical training in the Middle East region.

**Methods:** This cross-sectional study was conducted on fourth-year medical students at the end of their first clerkship. A self-administered questionnaire containing different aspects of students' perceived stress, preparation and clinical supervision was administered to the participants.

**Results:** Of the 89 students, 63 responded (response rate of 71%). Almost half of the students (59%) experienced stress at the beginning of their clinical training, while 33% thought that they were ready to begin their clerkship training. A majority of the students (81%) reported the need for more time to adjust to the new environment, and 84% indicated that a good introduction to the clerkship would make the transition easy for them. About half of the students (54%) reported receiving feedback during their clinical training.

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**Conclusion:** This study highlighted the difficulties faced by medical students during their transition from pre-clinical to clinical training. There is a need to implement measures to ease this transition through a structured orientation about clerkship for both students and clinical faculty. In addition, it is recommended to organize faculty development workshops on feedback and supervision.

**Keywords:** Clerkship training; Clinical; Faculty development program; Medical curriculum; Preclinical

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## Introduction

Traditionally, medical education programs present learners with three major transitions.<sup>1</sup> The first arises when learners transfer from preclinical to clinical training. The second occurs as graduate medical students start to care for patients as junior doctors or specialist trainees. The third ensues as specialist trainees who complete their training and work independently. Each of these transitions is characterized by several challenging experiences, ranging from new roles with their associated tasks, to unfamiliar settings and colleagues.<sup>1</sup>

During the first transition, medical students encounter a shift from learning through lectures in a classroom setting to learning from real patients' issues in a clinical setting.<sup>2</sup> This new educational environment has been described as "the first truly immersive educational experience during which the majority of learning is vocational and self-directed".<sup>2</sup> It offers unique learning opportunities for students, through which they participate in workplace activities related to the medical profession.<sup>3</sup> Unlike the preclinical years, learning often needs to be at a faster pace, constant, and self-directed.<sup>2</sup> It requires students to be capable of self-reflection, recognize gaps in their knowledge and skills, and seek information to close these gaps.<sup>2</sup> Nonetheless, students reported that they were not well prepared for this transition.<sup>4–7</sup> A feeling of unpreparedness exacerbates students' stress and anxiety as they start their clinical training<sup>3,5</sup> both of which impede the transition and hinder learning and participation in clinical activities.<sup>3</sup>

Shift in the educational environment, pedagogical strategies, and assessment methods have been reported to be sources of stress for new clerks.<sup>3–6,8</sup> Furthermore, the change in role from student to part of the professional healthcare team<sup>9</sup> creates considerable challenges mixed with uncertainty and abstruseness.<sup>1,5,8</sup> Students' uncertainty often resulted from not knowing what was expected from them in the new clinical setting, and not being able to apply what they had learned during their preclinical years

to patients' problems.<sup>4–7,10–12</sup> Moreover, the considerable variation in approaches towards patient care by different clinical mentors aggravated their sense of uncertainty.<sup>5,6</sup> Evidence suggests that stress and uncertainty negatively impact students' cognitive function and learning.<sup>2</sup>

In the clinical learning environment, medical students are also faced with a variety of other difficulties, such as increased workload, insufficient time to study,<sup>4–7,11,13</sup> dealing with seriously ill patients,<sup>12</sup> and limited feedback and supervision from clinical mentors.<sup>14</sup> All these factors may contribute to students' dissatisfaction, increase their anxiety and distress, and at times lead to a burnout.<sup>15,16</sup> Thus, medical educators and educational leaderships advocate the scrutiny of this crucial juncture in medical students' learning, identify obstacles that hinder their learning and generate approaches to facilitate and ease their transition.<sup>1</sup>

Most studies addressing the difficulties faced by medical students during the transitional phase of their educational journey were conducted primarily in North America and Europe,<sup>2,3</sup> with limited information from studies in the Middle East. This study investigated the challenges experienced by medical students as they start their clinical training in the context of the Middle East, in the Gulf Region. The study was part of a project undertaken by the College of Medicine-University of Sharjah (COM-UOS) to improve teaching and learning in the clerkship phase. The aim of this study was to identify difficulties faced by medical students during the transition to the clerkship phase and to provide recommendations to improve the planning and preparation for this critical transition.

## Materials and Methods

This study was conducted at COM-UOS, where the program has three phases: The foundation year, a pre-clerkship and clerkship phases. The curriculum adopts the integrated system-based approach through Problem-Based Learning (PBL); basic, clinical, and behavioral sciences are integrated horizontally and vertically throughout the curriculum. In this cross-sectional study, data were collected through a written self-reported questionnaire presented to students in their fourth year, the start of the clerkship phase (No. 89). The study was conducted after students had finished their first 10-week clerkship rotation.

A validated questionnaire was adapted from a similar study conducted by Maastricht University.<sup>4</sup> The original questionnaire was reviewed and tailored to the local context after discussion among the researchers and subsequently with the faculty of the Clinical Sciences Department; it was then tested in a pilot study. The pilot testing of the questionnaire was conducted with 10 students in the clerkship phase.

The original questionnaire from Maastricht included the following categories: professional socialization; workload; patient contact; knowledge, knowledge application, and skills; and learning and education. Our final questionnaire was composed of 63 items distributed into the following 11

categories: transition and stress, clerkship orientation, workload, preparation, knowledge and skills, patient contact, clinical supervision and feedback, resources at clinical sites, educational activities, assessment, and academic advising. As a result of the pilot study, the category names in our questionnaire were changed from the original questionnaire to fit with the local curriculum terminology. Some other categories were added to fulfill the purpose of the clerkship improvement project. In this manuscript, results from three main categories—transition and stress, clerkship orientation, and clinical supervision and feedback—will be discussed.

Responses were collected using a Likert scale where 1 is “Strongly Disagree” and 5 is “Strongly Agree” for all questions except in the academic advising section, in which 1 is “Never” and 4 is “Always.”

Questionnaires were distributed to students at the training sites and collected by the clinical tutors at the Department of Clinical Sciences. The data from the questionnaire were analyzed quantitatively using SPSS-20. Percentages, means, and standard deviations were obtained. Responses for Strongly Agree and Agree were grouped together, as were Strongly Disagree and Disagree.

Permission to conduct the study was obtained from the College Deanship and Department of Clinical Sciences. Invitation for students to participate in the study were made through the clinical sciences department (the authors were not involved in this process), and participation in the study was voluntary. Anonymous questionnaires were distributed and collected by the clinical tutors.

## Results

The response rate was 71% (N = 63 of 89). The mean age of the participants was 21.74 years (range 21–23 years).

33% (N = 20) of students felt prepared for the clinical clerkship and 41% (N = 26) felt the transition to the clerkship was smooth; nevertheless, 59% (N = 37) expressed high stress and 75% (N = 46) felt that the first few weeks as a clinical clerk were difficult. Moreover, the majority of students 61% (N = 38) indicted experiencing an abrupt transition from preclinical to clinical practice, and 81% (N = 50) felt that they needed time to adjust to the new environment.

Around 63% (N = 39) were not satisfied with the orientation provided about the clerkship, and 84% (N = 53) agreed that a good orientation would make the transition to the clerkship easier. Only 37% of students (N = 23) were aware of the competencies they had to achieve by the end of their clerkship, whereas 71% (N = 44) agreed that they were aware of how they would be assessed during the clerkship.

Although the mean number of contact hours students spent with their clinical supervisors was 3.6 (range 1–8), only 39% (N = 25) of students agreed that they were observed frequently while taking medical history or performing a physical examination. Furthermore, 46% (N = 29) indicated that they had not received feedback about their performance.

All percentages, along with the means and standard deviations, are shown in Table 1 below.

**Table 1: Mean scores, SDs, and the number and percentage of those who agree, disagree, or are unsure.**

	Mean	SD	Disagree	Unsure	Agree
<b>Transition and Stress</b>					
I felt well prepared for clinical clerkship.	2.89	0.968	22 (36.1%)	19 (31.1%)	20 (32.8%)
The transition from pre-clinical to clinical training went smoothly.	3.05	1.038	20 (31.7%)	17 (27%)	26 (41.3%)
My uncertainty when starting my clerkship lasted only a few days.	2.87	1.138	25 (40.3%)	18 (28.6%)	19 (30.7%)
I needed time to adjust to the new environment.	3.94	0.939	7 (11.3%)	5 (8.1%)	50 (80.6%)
I experienced an abrupt transition from pre-clinical to clinical training.	3.52	1.004	13 (21%)	11 (17.7%)	38 (61.3%)
I experienced a great deal of stress.	3.45	1.126	17 (27.4%)	8 (12.9%)	37 (59.6%)
My first clerkship proved to be better than I expected.	3.16	1.231	20 (32.3%)	10 (16.1%)	32 (51.6%)
The first few weeks as a clinical clerk were difficult for me.	3.75	0.968	9 (14.8%)	6 (9.8%)	46 (75.5%)
<b>Clerkship Orientation</b>					
The orientation to the clerkship was satisfactory.	2.29	1.179	39 (62.9%)	9 (14.5%)	14 (22.6%)
A good orientation would make the transition to the clerkship easier.	4.22	0.888	3 (4.8%)	7 (11.1%)	53 (84.1%)
A general orientation should be provided to all new clinical clerks.	4.41	0.824	2 (3.2%)	4 (6.6%)	55 (90.1%)
The information provided about the structure and organization of the clerkship was sufficient.	3.08	1.071	18 (30.5%)	16 (27.1%)	25 (42.4%)
I was aware of the competencies that I had to achieve by the end of the clerkship.	2.76	1.224	27 (43.6%)	12 (19.4%)	23 (37.1%)
The competencies to be achieved during clerkship were explained by the faculty.	2.89	1.93	26 (41.1%)	10 (15.9%)	27 (42.9%)
I was aware of how I would be assessed during the clerkship.	3.63	1.075	9 (14.6%)	9 (14.5%)	44 (71%)
<b>Clinical Supervision and Feedback</b>					
I was frequently observed during patient contact ( <i>when I was taking a medical history or doing a physical examination</i> )	2.82	1.235	25 (40.4%)	12 (19.4%)	25 (40.3%)
I received sufficient supervision and constructive feedback about my performance	2.72	1.451	29 (47.6%)	5 (8.2%)	27 (44.3%)
The clerkship stimulated me to think and reflect on my strengths and weaknesses	2.98	1.431	24 (38.7%)	6 (9.7%)	32 (51.6%)

## Discussion

The program at COM-UOS uses PBL as a method of instruction. One of the published advantages of PBL is that it narrows the gap between the basic and clinical phases of the curriculum and prepares students to deal with patients.<sup>17</sup> However, the results of the study revealed that only one-third of students felt prepared for clinical training, coinciding with results from previous studies.<sup>4,7</sup> A recent study indicated that students' perceived preparedness is affected by several aspects, including students' characteristics, previous experience, and supervision during the clerkship.<sup>3</sup> Students with higher self-efficacy<sup>3</sup> and those with previous exposure to professional activities during their studies tend to feel more prepared.<sup>3,7</sup>

Inadequate preparation for clerkship predisposes medical students to stress and anxiety,<sup>3,5</sup> both of which impede the transition and hinder learning and participation in clinical activities.<sup>3</sup> In our study, around two-thirds of students experienced stress at the beginning of their clerkship, higher than the results of a previous study in which half of the students were nervous at the start of clerkship.<sup>4</sup> Students with low learning or organizational capabilities, those that lack insight or have mental health issues, or those who experience major personal difficulties are more affected by stress during the transitional phase. Such students may require extra support and advice.<sup>18</sup> One limitation is that the counseling process in the clerkship phase at COM-UOS is not well organized.

The General Medical Council of the UK recommends that medical schools should ensure arrangements are made to recognize students with symptoms of stress, and provide more guidance and support during transition periods.<sup>19</sup> In the USA and Canada, medical schools provide prevention measures in the form of health promotion programs that deal with problems at an early stage. Such measures have proved to decrease the adverse effects of stress on students' health and academic performance.<sup>20</sup>

Another particular cause of stress for medical students is "intolerance of uncertainty".<sup>16</sup> The most common uncertainty reported by medical students was that "they were afraid that they would not learn all they should know".<sup>16</sup> In this study, only one-third of students ( $N = 23$ ) were aware of the competencies they were required to achieve by the end of their clerkship, which could have been a source of stress in the early phase of the clerkship. Similarly, in a previous study, students considered uncertainty about expected learning objectives to be a source of stress.<sup>8</sup>

Orienting students at the commencement of a clerkship by clarifying the structure and organization, students' roles, and clinical supervisors' perspectives can make learning more efficient.<sup>21</sup> In our study, students were not satisfied with the orientation provided for the clerkships; the current orientation practice is a session of 1–2 h at the beginning of the clerkship, covering only the administrative aspect of working through the clerkship period. Most students of this study agreed that a proper orientation would make the transition to the clerkship easier, compared to findings reported in other studies.<sup>4,5</sup> Although orientation for the clerkship is provided at COM-UOS, it is not satisfactory for the students. This might suggest that orientation in the

clinical setting, provided by clinical mentors, has not met students' expectations.

Clerkship directors' efforts to improve clerkship transitions should be directed towards a better orientation to the clerkship and supplement student support.<sup>22</sup> The intended goals and standards of the clerkship should be clarified for both students and clinical faculty members, at the beginning and throughout the clerkship.<sup>19</sup> Written documents should state the assessment criteria and standards. Students should be encouraged to seek further clarification through structured academic advising sessions. Formal and non-formal academic advising sessions should be available at all times, more importantly at the start of the clerkship. Additional alternatives, such as scheduled "peer-to-peer" orientation sessions have been reported to be successful and well-appreciated by students.<sup>23</sup> Clarifying what students need to accomplish during the clerkship is not limited to the orientation at the beginning of the clerkship; it should rather be revisited all through as part of the feedback process of clinical training. As depicted by Hattie & Timperley, a substantial element of effective feedback is defining the learning goals the learner needs to achieve.<sup>24</sup>

In our study, nearly half of students were not content with the feedback and supervision they received during their clerkship. Although the role of feedback in student learning is well-documented in the literature,<sup>25,26</sup> it is not well implemented during clinical training.<sup>27</sup> Observing students while they take medical history and perform physical examinations is fundamental for effective feedback.<sup>26,28</sup> Our students reported that they were infrequently observed during their clinical training and were not satisfied with the feedback provided. The process of giving feedback is a skill that can be mastered.<sup>28</sup> Thus, encouraging clinical mentors to attend faculty development workshops focusing on feedback provision is fundamental for students' learning, and should be a priority for those coordinating clinical clerkships.

The study has some limitations. First, the participants included only one cohort of new clerks; it would be better to include more than one cohort to determine the consistency among different batches. The second limitation is that some factors (such as gender) are missing from the questionnaire; this could suggest future research about the relationship between sex and the mentioned factors.

## Conclusion

Foreseeing the difficulties facing the new clerks and implementing measures to ease their transition should be a priority for any reforms in clinical training. These reforms should include a structured orientation about the clerkship for both students and clinical faculty, as well as organization of faculty development workshops focusing on feedback provision and supervision.

## Recommendations

This study recommends a different way to think about planning for the clerkship phase of the curriculum; plans should consider the challenges that may affect students' learning outcomes, especially those that could be amended or

modified. Materials prepared before the start of the clerkship would certainly help make the experience less stressful for students. The key lies in also using innovative techniques to introduce students to the clerkship, such as small group discussions. More research is needed to study these factors with a bigger sample of students using qualitative data, and to study the challenges from different angles, such as from the perspective of teachers and hospitals.

### Conflict of interest

The authors have no conflict of interest to declare.

### Ethical approval

The study received approval from the College Authority as part of an evaluation project.

### Authors' contributions

Both authors equally formulated the idea, design of the study and data collection tool, data analysis, and manuscript writing. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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