Does contextual environment affect clinical reasoning skills?

L McKenna, J Wilson and C Henderson

Clinical Teaching Fellows, NHS Tayside, Ninewells Hospital and Medical School, Dundee DD1 9SY

Introduction

Confusion is a common yet challenging clinical presentation, with a vast number of possible causes spanning multiple medical specialties[1]. To diagnose correctly, medical students must develop strong clinical reasoning skills. Teaching clinical reasoning can be challenging as it is complex, and its rationale often hidden to students[2]. At the University of Dundee, we developed a clinical reasoning game to enhance both understanding of clinical reasoning and causes of confusion.

Aim

Our aim was to investigate if placement setting influenced students' clinical reasoning skills.

Methods

Following ethical approval, a clinical reasoning tutorial focused on confusion was developed. The tutorial was delivered to Year Four students undertaking their Psychiatry or Medicine for the Elderly (MFE) placements from January 2025.

The tutorial consisted of an initial group discussion regarding clinical reasoning, followed by the clinical reasoning grid game. Students were given 20 minutes to complete the game in small groups, and photographs were taken of initial diagnoses chosen. Any errors were corrected and a full-group discussion followed focusing on reasoning behind diagnostic choice.

Each group's initial diagnoses were grouped into correct or incorrect diagnoses. The incorrect diagnoses were then classified as psychiatric or medical, and results from each placement setting compared.

Results

To date, eight tutorials have occurred: four in each placement area. The tutorial size varied from 5-13 students.

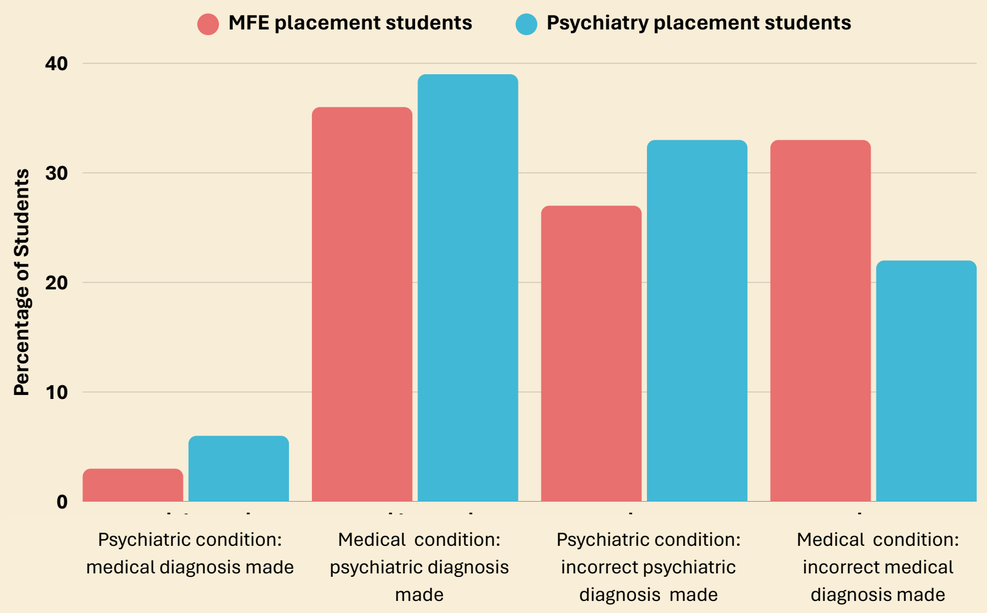
The clinical reasoning game was completed in groups of 2-4 students with a maximum of four groups per session. In the game, students needed to make two medical and two psychiatric diagnoses.

Overall, 4 out of 25 (16%) groups successfully completed the game without error. Of incorrect diagnoses made, 72% suggested by students on psychiatry placement were psychiatric diagnoses, compared to 63% within the MFE placement. This suggests that students were influenced by their contextual environment, with psychiatric placement students favouring a psychiatric diagnosis over the correct medical diagnosis.

The Game

Diagnosis	Depression				
Age/Gender	72-year-old male		68-year-old female	83-year-old female	
Onset/duration		This seems to have happened out of the blue - they were fine a week ago			It's just been the last couple of days really
Features			it's little things like forgetting plans or not remembering which is the remote for the new TV!	They seem very confused - at times they don't seem to know even what day it is!	
Exacerbating & Relieving factors	Things were maybe a bit better when I took them to visit their family last month.				
Previous episodes	I don't think this has been a problem before	This happened a few months ago			I think it's been a problem a few times before
Other Symptoms				They've just not been right since they were in hospital - headaches and sickness all the time, they're just not their usual delightful self.	When I picked them up earlier, they seemed to think there were ants in their house but when I looked I couldn't see anything
Past Medical History				Anxiety. Hypertension. Congestive cardiac failure with recent hospital admission.	
Drug History				Sertraline, Ramipril, Atenolol, Furosemide	
Social History		We live together and our daughter visits every few months. We also have carers that come in a couple of times a day to help with meals. They don't smoke and only drinks a wee whiskey as a nightcap.			
Family History		Father had Alzheimers			Younger sister had a stroke last week

Incorrect diagnoses



Conclusion

Our data suggests contextual environment may affect students' clinical reasoning skills, although further study is required. We would advise consideration of placement environment when planning clinical reasoning tutorials.

References

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