**Note:** This is Online Appendix 1 of Hess, D., Hendricks, J., Frantz, J. & Rowe, M., 2025, 'Student and educator perspectives on clinical reasoning: A qualitative study', South African Journal of Physiotherapy 81(0), a2161. https://doi.org/10.4102/sajp.v81i0.2161.

## Online Appendix 1

**TABLE 1-A1: Interview questions**

| **Students** |
|---|
| 1. Describe your understanding of clinical reasoning<br>a) Was it taught to you?<br>b) Do you think it should be taught to you?<br>2. Do you think the learning tasks in your classes/modules equip you to clinically reason?<br>a) How?<br>3. What is the basis of sound decision making?<br>a) Do you have it?<br>b) Do you need it?<br>c) How can you get it?<br>4. Explain how you go about clinically reasoning with a patient in clinical practice.<br>5. Explain the process you go through when you make a clinical decision for your patient<br>a) How do you think you make decisions for your patients? (Describe)<br>b) Can you think of any situations during clinical practice or clinical supervision that make it difficult to stick to your own process of clinical reasoning?<br>c) How do you use clinical reasoning to formulate a hypothesis?<br>6. Will the ability to clinically reason make you a better physiotherapist?<br>7. Do you ever find yourself taking 'shortcuts' with your patients?<br>8. When? Why? How do you know?<br>9. Can you describe any challenges that you experience with regard to the clinical reasoning concept? |
| **Lecturers** |
| 1. What module are you responsible for teaching in the physiotherapy department?<br>a) How does clinical reasoning play a role in your module?<br>2. What do you understand by clinical reasoning?<br>a) Is it necessary for the physiotherapist today/in our current times of practice?<br>3. How do you think you enhance clinical reasoning in your students/modules/teaching?<br>a) What teaching methods or teaching style do you use or do you think will/do/could assist with enhancing clinical reasoning in the classroom?<br>b) Is your class / the curriculum preparing your students for the necessary clinical decision making they require in real world |

practice?

c) Do you think the physiotherapy curriculum adequately prepares the students for the required decision making / clinical reasoning in the real world?

4. What type of learning tasks do you give to your students?
    a) How do you think these tasks enhance clinical reasoning in your students?
    b) Can you explain how the tasks you give your students assist them to clinically reason or enhance clinical reasoning?

**Clinical Educators**

1. What is your understanding of clinical reasoning?
    a) How do you see the process of clinical reasoning either when you are watching a student with a patient or when you are with a patient?
    b) How do you identify clinical reasoning difficulties in students? OR What tells you a student has a problem with clinical reasoning?
2. How do you think you personally help develop clinical reasoning in students?
    a) What strategies (if you have any) have you found helps you develop this complex skill in undergraduate students?
    b) Describe a typical supervision session with a student please.
        i. Do you allow students to test their own theories?
        ii. How do you deal with student logic? Thinking? Processing?
        iii. Describe how you provide feedback to students
            1. How much time do you spend on feedback?
            2. When do you give feedback?
3. How do you cultivate trust and build a relationship with your student(s) during the supervision session?

**TABLE 2-A1: Themes, codes and quotes.**

| Theme | Codes | Expert Perspectives (Lecturers/Clinical Educators) | Novice perspectives (Students) | Key differences |
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| **Cognitive Processes** | Existing knowledge | *"So you have to be able to have good conceptual knowledge, first of all." (L8)*<br><br>*"… it basically starts with understanding your anatomy and your physiology and that ties together what you see and what you eventually will assess." (CE7)* | *"… it's like the knowledge to know the patient's diagnosis, the presentation, …" (S2)*<br><br>*"Basically just using your knowledge to form a clinical picture for the patient and what you need to do with the patient." (S23)* | |
| | Collect information | *"So it's about gathering information …" (L1)*<br><br>*"... so yes the information is gathered basically from the file first …" (CE5)* | *"... the information you have gathered from your patients and from the file and being able to use that to focus your assessment and treatment of your patient …" (S15)*<br><br>*"...includes everything that you are presented with, so their condition, any changes, your subjective history and then taking all of that information to then either assess the patient, or treat* | |

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| | | | *the patient in a correct way, in a safe way, and in an effective way as well." (S26)* | |
| | Connecting various information points | "*They've got to know something in order to say well based on what I know here, and what I found here, I can then link the two and say this is what I need to do next." (L1)*<br><br>*"… I see clinical reasoning as a thought process that happens from information that you have gathered and from there you will sit with all this information and then you basically know what to do with it." (CE1)* | *"... you make a whole lot of different links which gets you to your answer of how you want to treat the patient." (S18)*<br><br>*"...taking what we know and trying to come to some sort of you know or the best way to treat a patient…" (S25)* | |
| | Making decisions about the patients | *"... whether you are a student or a therapist and their reasoning to get to a clinical decision or to a decision with regards to management of their client." (L9)*<br><br>*"… it is that path that they followed and that led them to decide, you know, that this* | *"... combine the two so that you can figure out what is happening to the person, …" (S17)*<br><br>*"So it is basically figuring out what you want to do with the patient and understanding why you want to do it." (S20)* | |

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| | | *patient has this type of condition or not." (CE2)* | *"...you are able to make a decision in a clinical setting…with regards to the patient…" (S26)* | |
| | Ability to problem solve | *"... maybe problem solving or working through a certain situation, to come up with an answer of some sorts, if given a specific situation." (L7)* | *"... it is the way that you get to the answer of a problem that a patient presents …" (S18)*<br><br>*"So being able to grasp that and putting that together into one thing, one hypothesis that is clinical reasoning for me." (S19)* | |
| | Hypothesis generation | *"So it is integrating findings from different sources, from what you see and from what you know and from what the patient tells you and trying to form a coherent picture." (L10)*<br><br>*"You see how everything fits together and you get the bigger picture of "okay so this is what's wrong" and you already automatically know how you're going to approach this* | | Only the lecturers and clinical educators mentioned or highlighted hypothesis generation as an important aspect of clinical reasoning. |

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| | | *problem …" (CE1)* | | |
| | Justification of action | | *"So how I see clinical reasoning it's almost like why you are doing a certain technique or it's kind of like the reasons behind and how it will improve or why you think it is going to improve the patient's condition and all stuff like that." (S5)*<br><br>*"…clinical reasoning for me is basically the why power, so why are you doing what you doing?" (S22)* | Only the students mentioned the importance of justifying their choices. |
| **Evidence-Based Practice** | Apply theory to practice | *"So clinical reasoning for me is if you can apply what you've learnt in class better as being in a practical or a theoretical lecture, if you can apply it to a patient, the real scenario, you go out to the hospital and you decide okay, this is now the best technique." (L2)* | *"I understand clinical reasoning, taking knowledge and applying it." (S6)*<br><br>*"…my understanding of what clinical reasoning is. Like the ability to, apply the theoretical knowledge into practice." (S23)* | |
| | Use of information | *"I think it is to be able to take a set of information and* | *"My understanding of clinical reasoning is for example when* | |

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| | | *to reason …" (L5)*<br><br>*"… from there you will sit with all this information and then you basically know what to do with it." (CE1)* | *they are in a clinical placement and then you get a patient and then the patient starts explaining to you the signs and symptoms and then you use those signs and symptoms to diagnose the patient and then plan the treatment." (S7)* | |
| **Clinical Approach** | Saw patient as a big part of clinical reasoning | *"Every day you are looking at the patients in a new way, and so for me clinical reasoning is that process of trying to come to an understanding of your relationship with the patient today, at this moment." (L6)*<br><br>*"… being able to adapt per patient depending on how the specific patient is presenting." (CE3)* | *" … your thinking will vary from patient to patient because it's all different situation scenarios etcetera." (S11)* | |