

Abstract: Information gathering and synthesizing in pharmacy students

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Introduction. Failure to retrieve relevant and accurate information is one of the most common causes of medication errors and poor patient outcomes. Therefore, information gathering and synthesizing are skills seen and required for registered pharmacists. However, pharmacists' therapeutic reasoning processes are often intuitive and unconscious. Thus, it is reasonable to assess those of students since their thought processes are more apparent and explicit. The analytical (also known as slow, conscious, explicit, logical) component of the dual process model (i.e., thinking fast and slow) is the underpinning theory of this study, due to the nature of information gathering and synthesizing.

Aim. To demonstrate how student's information gathering and synthesizing strategies influence medication-related problem identification.

Methods. This study followed a qualitative methodology. Forty third-year pharmacy students were recruited in a think-aloud activity following hospital OSCE format, with one facilitator simulating an on-site doctor. These students were asked to verbalize their thought processes while independently solving a clinical case involving one or more medication-related problems. Students' responses were deidentified, transcribed and coded to find themes in their information gathering and synthesizing strategies.

Results. Students showed utilization of analytical processes to collect information, including considering background, gathering information from existing documents, inquiring the doctor, and checking references. Students often relied on these analytical processes after reported uncertainty from their own knowledge and intuition. A number of students did not complete their information gathering despite having insufficient information. Students also demonstrated hypothesis formation strategy which helped guide their information retrieving. However, early-made incorrect hypotheses typically distracted students from making rational judgements and consequently from appropriate recommendations.

Discussion. This study on how students retrieve and incorporate information into decision making can improve our understanding of these processes in learners. The methods of this study may be further applied in expert pharmacists. The results can be compared to identify the differences between experiences' and novices' minds in gathering and synthesizing information.