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Teaching Cognitive Bias in a Hurry: Single-Session Workshop Approach for Psychiatry Residents and Students

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Abstract

Introduction: Diagnostic ambiguity is commonplace in psychiatric practice. With limited etiological understanding behind the illnesses that we treat, it can be a daunting task to diagnostically approach a complex patient. To avoid diagnostic pitfalls, it is paramount to employ carefully constructed diagnostic cognitive processes. The aim of this resource is to decrease diagnostic thought errors through education via acquired knowledge and skills. **Methods:** This workshop is intended as a primer for psychiatric medical students, interns, residents, and practicing psychiatrists who have not yet been exposed to this topic. The resource consists of a brief didactic session (knowledge portion of the topic) followed by small-group sessions (skills portion of the topic), led by discussion of clinical vignettes incorporating complex medical-psychiatric patients. The cases highlight the various cognitive biases and anchor points that can contribute to diagnostic error. In order to make it easier for educators to implement, the workshop can be delivered in a single 1-hour session. With the provided material, this educational session can be easily delivered by a single facilitator. **Results:** Formal and informal feedback from learners demonstrates that this resource is effective at teaching cognitive bias to learners. **Discussion:** While psychiatric learners are used to metacognitive approaches in clinical settings, they often lag behind other medical specialties in discussing these topics related to their own diagnostic reasoning and acumen. This is especially important in psychiatry given the evolving nature of our specialty.

Keywords

Cognitive, Bias, Attending, Psychiatry, Diagnostic, Theory

Appendices

- A. Student Handout.docx
- B. Case 1 Instructor's Version .pdf
- C. Case 1.docx
- D. Case 2 Instructor's Version .pdf
- E. Case 2.docx
- F. Didactics.pptx
- G. Evaluation.docx

All appendices are peer reviewed as integral parts of the Original Publication.

Educational Objectives

By the end of this session, learners will be able to:

1. Describe illness script and problem representation.
2. Summarize the advantages and disadvantages of heuristics in clinical reasoning.
3. Recognize at least three types of cognitive biases from provided clinical vignette cases.
4. Demonstrate two types of cognitive strategies to reduce cognitive biases in provided clinical vignette cases using the cognitive debiasing strategies card.

Introduction

Diagnostic ambiguity is commonplace in psychiatric practice. With limited etiological understanding behind the illnesses that we treat, it can be a daunting task to diagnostically approach a complex patient. The nexus between a medical and a psychiatric illness is fraught with diagnostic pitfalls; incorrect treatments and diagnosis can be costly and dangerous. In psychiatry, we depend on reliable but not necessarily valid diagnostic entities; therefore, a carefully constructed diagnostic approach is even more important to ensure medical conditions mimicking psychiatric disorders are suspected at their earliest presentation.

Mistakes in the diagnosis and treatment of complicated patients are inevitable.¹⁻³ Standard practice is to constantly hone our diagnostic acumen and analyze our clinical approach. It is necessary for us as

practitioners of medicine to focus inwardly to analyze how we deploy cognitive strategies, utilize heuristics, mitigate cognitive bias, and think about when it is appropriate to use fast versus slow thinking.

Data have shown that through education, diagnostic reasoning skills can be improved.^{1,4-6} The aim of this workshop is to help learners become familiar with various cognitive strategy theories and learn to mitigate personal contributions of diagnostic error.

Residency programs are filled to capacity with educational requirements. Many curricula compete for the limited time available to residents and program directors. Thus, we designed this introductory workshop to be delivered over a single 1-hour session. It is designed based on adult learning theory to provide optimal understanding of the knowledge and skills needed by future psychiatrists.

There is a paucity of information on this topic within the field of psychiatric education. Most of the literature on this topic comes from the fields of internal medicine and emergency medicine. This workshop is a unique contribution as it combines the important discussions of how psychiatrists make diagnostic decisions, what some potential pitfalls are, and what the sources of diagnostic error are. It further builds on these topics and proffers a potentially efficient rubric for introducing them to residents given that residency programs are filled to capacity with educational requirements.

Methods

The only resource required is audiovisual equipment to utilize the PowerPoint presentation. The facilitator also needs to be able to produce paper handouts.

The course begins with a case discussion (Appendix F). The purpose of the case is to introduce the topics; open the discussion; highlight potential diagnostic approaches, cognitive errors, and diagnostic pitfalls; and assess the learners' precourse knowledge.

Upon completion of the case discussion, learners undergo a 20-minute didactics using the provided slide-show lecture (Appendix F). This helps to introduce the basic concepts of clinical decision-making, potential sources of diagnostic errors, heuristics, cognitive bias, and cognitive forcing strategies. The didactic session begins with a question that is implemented with the hope of causing audience members to commit a cognitive error. It is a modified form of the cognitive reflection test.⁷ We use electronic polling software, but as an alternative, audience members could be asked to raise their hands. If the latter is implemented, encourage all audience members to commit to an answer and participate.

After the didactic portion of the class, the learners are paired. Each partner is identified as Learner A or Learner B. The provided cases (Appendices C & E) are used by each partner, respectively, to apply the knowledge learned during the didactics. The instructor's versions of the cases (Appendices B & D) can be used by the educator to help highlight important learning points in the steps below.

The learners are asked to take 10 minutes each to review the two cases. Learner A reads Case 1 to Learner B. Learner B is asked to take notes on the case. Once the case is presented, Learner A then asks Learner B the questions supplied with the case. They are encouraged to refer to the provided card (Appendix A) to use the diagnostic language and labels. The instructor moves from group to group to provide help or clarification. The instructor can refer to the supplied discussion of both cases using instructor's versions of the cases (Appendices B & D). At the end of 10 minutes, the instructor opens a large-group discussion for 5 minutes, asking each learner for his or her comments and answering any questions. The same process is repeated by Learner B presenting Case 2 to Learner A for 10 minutes, with a repeat large-group discussion of 5 minutes duration.

The last 5 minutes of the session are spent going over the conclusion slide, as well as eliciting feedback on the session from the learners (Appendix G). The [Table](#) provides a breakdown of the session schedule.

The presenter can choose to export this to an electronic format such as SurveyMonkey if desired. Appendix D provides students with next steps to further develop their knowledge, skills, and attitudes towards this topic.

Table. Session Schedule

Activity	Time Required
Case discussion	10 minutes
Didactics	20 minutes
Pair Case 1, Learner A	10 minutes
Large-group discussion, Case 1	5 minutes
Pair Case 2, Learner B	10 minutes
Large-group discussion, Case 2	5 minutes
Feedback and evaluation	5 minutes
Total	65 minutes

Results

The curriculum has been previously presented to internal medicine and psychiatric audiences. It has been conducted at our institution and has been offered at the American Psychiatric Association's 2014, 2015, and 2016 Annual Meetings to a wider audience including approximately 200 psychiatrists. It was also presented to internal medicine residents in 2015 at a large academic institution. Additionally, it was presented to primary care providers in deployed military settings in Kuwait in 2015. Informal feedback was elicited at each session, leading to improvements in the format, content, and delivery of the workshop in its current state. Small revisions have been necessary to implement this curriculum with these different groups of learners.

In May 2014, 15 psychiatrists and psychiatry residents participated in a five-item pretest and posttest while undergoing a slightly longer (90-minute) version of this workshop. Both pretest and posttest stems were identical; they were given immediately before starting the workshop and at the conclusion. The overall percentage correct improved from 30.4% to 64.8% from pretest to posttest, respectively.

Feedback was elicited informally. Formal feedback was received from only two participants. Both participants indicated they would recommend this resource to a colleague. On a scale of 1 to 5, 1 being least agreeable, the following means were obtained:

- Workshop objectives were clear (4.5 out of 5).
- Workshop lived up to my expectations (5 out of 5).
- Content is relevant to my job (5 out of 5).
- Workshop stimulated my learning (4.5 out of 5).
- Workshop gave me sufficient practice (4.5 out of 5).
- Pace was appropriate (4.5 out of 5).
- Satisfaction with metacognition strategy card organization (4.5 out of 5).
- Overall educational content (4.5 out of 5).

The following informative comments were provided by the learners:

- "The content, organization, clarity and interactive components were all of excellent quality. One of the best overall educational sessions that I attended at this year's meeting! Similar workshops should be a mandatory inclusion in all medical schools/training programs."
- "Cases illustrated the points well, and the fact that they were real cases added to their value as not just hypothetical pitfalls."

Note that the longer 90-minute version of the workshop used two additional practice cases, that is, two cases per learner. The 60-minute version of the workshop, provided here, uses one case per learner.

In April 2015, pretests and posttests were supplied to internal medicine residents at a large academic center. These learners had previously been informally taught some of the same concepts by coauthor Rohul Amin, but this was their first formal workshop on the topic. A total of 25 residents participated. Both pretest and posttest tested four items: recognition and application of identifying unpacking bias, blind obedience, availability bias, and recognition of illness script behavior in a question stem. The pretest and posttest stems were modified but tested the exact same four items. All 25 residents, including PGY-1s, PGY-2s, and PGY-3s, participated. Overall, the percentage of correct answers from pretest to posttest improved from 40% to 65%. The unpacking bias item improved from 36% correct to 84% correct, blind obedience from 36% correct to 48% correct, availability bias from 20% correct to 36% correct, and problem representation from 68% correct to 92% correct. Feedback was informally elicited from the learners, which led to improving upon some of the ambiguous language in the cases.

Discussion

concepts that can be introduced adequately within such a short time frame. Future opportunities for development include a more comprehensive lesson that would take approximately 3 hours to implement and would focus on learners who already have a familiarity with the concepts in the current workshop.

Thought errors are a leading cause of morbidity and mortality in medicine, with serious medical and legal implications.² Understanding how we think and make decisions decreases our tendency to commit cognitive errors. Metacognition (thinking about our thinking) is the first step in helping us assess our confidence level when dealing with diagnostic data. Utilization and familiarity with common cognitive biases in daily practice may help in the clinical maturation process. As an important part of the curriculum for students, we believe these concepts will provide a foundation for learners to build upon.

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Ethical Approval

Reported as not applicable.

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