ABSTRACT

BACKGROUND: Previous research suggests that medical professionals are susceptible to clinical decision-making biases, which have the potential to negatively impact clinical care. In the field of psychiatry, little systematic research has been conducted to evaluate the presence of such biases. The objective of this investigation was to evaluate, in a sample of attendees of a psychopharmacology review course, the presence of two of the more common clinical decision-making biases, hypothesis selection and pseudodiagnosticity.

METHODS: 265 (84.2% prescribers; 47.5% female) mental health practitioners completed an instrument designed to measure the presence of hypothesis selection and pseudodiagnosticity biases. Data analyses (paired-sample t-tests and a z-test for two proportions) were conducted to evaluate two specific hypotheses: 1. Hypothesis selection: that doctors will neglect alternative hypotheses when diagnosing a patient, when reasoning from a disease to a symptom and 2. Pseudodiagnosticity: that doctors preferentially select diagnostic information that is consistent with their initial hypothesis, rather than choosing information that challenges their hypotheses.

RESULTS: Results confirm that mental health practitioners exhibit the hypothesis selection bias, when reasoning from disease to symptom (t=-4.92, df=129, p<0.001). Contrary to our hypothesis, respondents to this instrument did not demonstrate the pseudodiagnosticity bias (t=3.86, p=0.001); rather they chose to obtain information that challenged their hypothesis.

CONCLUSIONS: These data suggest that mental health practitioners may demonstrate decision-making bias in their clinical work. Specifically, we found in this sample the presence of the hypothesis selection bias, which could result in sub-optimal clinical care. However, clinicians did choose information that would expand their diagnostic capabilities. Further research is needed to identify what decision-making biases are most common in this population, and to formulate methods to address these biases.

METHOD (cont.)

Hypotheses

Hypothesis Selection
1. Experimental Survey: Participants will rate both scenarios provided as equally likely, though the causal scenario should be rated as more likely (there are many other reasons for the lethargy).
2. Control Survey: Participants will rate the “Diagnostic Scenario” as less likely than the “Diagnostic Scenario with no Alternative Hypotheses” because the second question suggests that depression is the sole cause of the lethargy.

Pseudodiagnosticity: Participants will choose A, which would provide information in agreement of their diagnosis, rather than choosing B, which would broaden their hypothesis by ruling out other possible diagnoses.

METHOD (cont.)

Figure 2. Pseudodiagnosticity Question

Assume that a person randomly selected from the population has an equal chance of being diagnosed with Schizophrenia or Bipolar I Disorder. Both of these disorders can be used to explain a patient who presents with grandiose delusions and irritability. The probability is high that a person who presents with grandiose delusions has schizophrenia. Given this information, which of the following would you most like to know in order to correctly diagnose this patient?

A. The probability of irritability in Schizophrenia
B. The probability of grandiose delusions in Bipolar I Disorder.

RESULTS

Pseudodiagnosticity Results

Contrary to the hypothesis, this group of mental health providers were actually significantly less likely to demonstrate the pseudodiagnosticity bias (t=3.86, p<0.005).

CONCLUSION

• Mental health providers demonstrate a bias when reasoning from a disease to a symptom, which may significantly impact their ability to accurately diagnose their patients.

• However, providers in this study demonstrate a willingness to gather information inconsistent with the current hypothesis that would help them to accurately diagnose a patient, by creating a likelihood ratio.

• Future studies need to be conducted in order to determine the presence of the hypothesis selection bias in other groups of providers, as well as to come up with a methodology in order to address these cognitive errors.

REFERENCES
