The role of specific disease knowledge in counteracting bias in diagnostic reasoning

No registrations found.

Ethical review	Not applicable
Status	Pending
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON25411

Source
NTR

Brief title
KnowBias

Health condition

Inflammatory bowel disease; Hyperthyroidism; Vitamin B12 deficiency; Addison’s disease; Acute appendicitis; Acute bacterial endocarditis

Sponsors and support

Primary sponsor: Institute of Medical Education Research Rotterdam (iMERR) and Department of Internal Medicine, Erasmus Medical Center; Department of Psychology, Education and Child Studies, Erasmus University Rotterdam
Source(s) of monetary or material Support: Erasmus MC, iMERR

Intervention

Outcome measures

Primary outcome

Frequency of wrong diagnoses induced by the bias

Secondary outcome

Knowledge test score; diagnostic accuracy scores; time spent in diagnosis; rating of confidence in the diagnosis; frequency of bias-induced diagnoses recalled subsequently.

Study description

Background summary

Diagnostic errors have been attributed to flaws in physicians’ reasoning associated with the use of heuristics. Experimental studies have provided evidence that the use of heuristics may eventually induce bias in reasoning, causing physicians to make diagnostic errors. However, this research suggests that among physicians at the same level of training some seem to be more susceptible to bias than others. The sources of these differences in ability to overcoming the influence of bias are unclear. The present study examines whether specific disease knowledge predicts susceptibility to bias in diagnostic reasoning. Physicians will diagnose the same set of clinical cases both under conditions that make them subjected to bias and not subjected to bias in a counterbalanced design. Physicians' knowledge of critical diagnostic features for the diseases presented in the cases will be evaluated and it will be analyzed whether differences in knowledge predict the frequency of bias-induced errors.

Study objective

Overall, diagnostic accuracy will be lower on subjected-to-bias than on not-subjected-to-bias cases, but the difference in accuracy will be smaller in the group of physicians with higher knowledge of critical diagnostic features.
Overall, the frequency of the wrong diagnoses induced by the bias will be higher on subjected-to-bias than on not-subjected-to-bias cases but lower in the higher-knowledge than in the lower-knowledge group.
Overall, physicians will spend more time to diagnose subjected-to-bias than not-subjected-to-bias cases.
Overall, the rating of confidence in the diagnosis will be lower on subjected-to-bias than on not-subjected-to-bias cases, but the difference will be lower in the higher-knowledge group.
Overall, the diagnosis triggered by the bias will be mentioned more frequently when physician recall which diagnoses they had considered on subjected-to-bias than on not-subjected-to-bias cases, without differences between the two knowledge groups.

Study design

Outcomes measured in the knowledge evaluation phase and in the diagnostic performance phase, with 4-48 hours in between.

Intervention

Each clinical case will be manipulated to become either subjected to bias or not subjected to bias. Bias will be induced by adding to the case salient distracting features, findings that though irrelevant to the case tend to catch physicians' attention because they are strongly associated with a particular disease that seems at first glance a plausible diagnosis.

Contacts

Public
Erasmus Medical Center
Silvia Mamede

+ 31 10 7038270
Scientific
Erasmus Medical Center
Silvia Mamede

+ 31 10 7038270

Eligibility criteria

Inclusion criteria

Residents in internal medicine or emergency medicine in hospitals in the Netherlands who have at least 1 year of clinical experience

Exclusion criteria

Medical students; residents in internal medicine or emergency medicine with less than 1 year of clinical experience or from other specialties

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Allocation:	Randomized controlled trial
Masking:	Double blinded (masking used)
Control:	Active

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	15-12-2020
Enrollment:	62
Type:	Anticipated

IPD sharing statement

Plan to share IPD: No

Ethics review

Not applicable

Application type:	Not applicable

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
NTR-new	NL9119
Other	EC-DPECS Erasmus University Rotterdam : EC-DPECS 20-026

Study results