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Proficiency of FPPI and objective numeracy in assessing breast cancer risk estimation.

Learn. Individ. Differ. 43, 149-155 (2015).

Summary: Two studies examined the effectiveness of the Fuzzy Processing Preference Index, (FPPI) an individual differences measure of base rate neglect/respect, and an objective numeracy scale in predicting subjective probabilities of the likelihood of breast cancer, BRCA mutations, and the conditional probability of breast cancer given BRCA mutations in medical risk scenarios. FPPI and objective numeracy independently predicted estimate accuracy for breast cancer and genetic mutation risk. Surprisingly, objective numeracy positively correlated with overestimating conditional probabilities across the board, as well as BRCA mutations and breast cancer risk for high-risk scenarios. FPPI was strongest in predictions for high-risk scenarios, but did not predict conditional probability estimates. FPPI uniquely predicts risk estimation accuracy controlling for objective numeracy suggesting the two measures assess distinct cognitive processes. We conclude that FPPI and other numeracy measures may be profitably used together, and FPPI appears better than traditional numeracy measures in some medical decision-making contexts.

Classification: K50 M60 D70

Keywords: numeracy; fuzzy-trace theory; risk; probability estimation; medical decision-making
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