A Novel Decision Support System for Systematic Job Matching of Individuals With Developmental Disabilities

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Background

• “Job matching is the collaborative, data-based decision-making process used by transition teams to determine the best fit between an individual’s abilities and preferences and the job’s environmental and occupational demands”

• Optimal vocational performance occurs when workers’ abilities are well matched to job demands

• Systematic Job Matching includes:
  1. Vocational Fit Assessment (VFA)
  2. Demands and Abilities Transforming Algorithm (DATA)
  3. Job Matching Reports (JMR)

• The Vocational Fit Assessment (VFA) was developed in an effort to operationalize this process

Results (continued)

Study 3:

• 291/360 successful trials
  • Accuracy = 80.8%
  • Sensitivity = 91%
  • Specificity = 67%
  • False negative rate = 9%
  • False positive rate = 33%
  • Odds ratio = 20.5

Study 4:

• 100% of teachers who use the DATA responded that they trusted the Demands and Abilities Transforming Algorithm (DATA).

Discussion

• When an individual demonstrates some ability (VFA-W>1) and a job has at least some demand (VFA-J>1), then the match between abilities and demands may be improved through intervention:
  1. Direct instruction to develop workers’ abilities
  2. Job accommodations provided under the Rehabilitation Act or the ADA
  3. Modifications of the work environment.

• The DATA functions with perfect accuracy at its extremes
• These data strongly support the basic logic of the Demands and Abilities Transforming Algorithm

References & Resources


Resources:

• For a digital copy of this poster, visit go.osu.edu/tetlab
• To access the VFA, visit vocfit.com

Figure. Demands and Abilities Transforming Algorithm

Figure. Simulated Decision-Making Scenario

Methods

Study Design:
• Clinical simulation

Participants & Setting:
• Academic medical center research lab. Participants were professional key stakeholders involved in the job matching process

Procedures:
• Studies were simulated decision making scenarios.
• Participants were presented with single data points from the VFA-J and from the VFA-W and asked to make an evaluative judgment. That is, given these data alone, would they choose to support or oppose a job match?
• Responses that aligned with the comparative algorithm were recorded as successful trials. Responses that did not support the comparative algorithm were recorded as trial failures.

Results

Study 1:

• 246/335 trials supported the DATA, a 73.4% accuracy rate
• 81 of 89 failed trials occurred when:
  • Job demands were high (VFA-J>2)
  • Workers demonstrate some ability (VFA-Worker=1)

Study 2:

• 185 trials, targeted the extremes of the DATA, in which job demands and worker abilities were either perfectly matched (i.e., high demand & high ability) or job demands greatly exceeded worker abilities (i.e., high demand & low ability), and resulted in a 100% accuracy rate.

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