Validation of the Function of Behavior Medical Screening (FOB-MED) Tool

Drew Boydston1, Mathew C. Luehring2, & Patrick W. Romani1,2
1 Children’s Hospital Colorado, Pediatric Mental Health Institute; 2 University of Colorado (Anschutz Medical Campus), School of Medicine

INTRODUCTION

• Functional behavior assessments (FBA) refer to assessment methodologies used to identify environmental variables associated with challenging behavior (Oliver et al., 2015), and include indirect, direct, and functional analyses.
• Poor to moderate correspondence has been found between indirect and direct assessment methods and FAs (Alter et al., 2008, Paclawskyj et al., 2001).
• Behavior analysts, behavior specialists, psychologists, etc. are typically responsible for providing behavioral support services, which limit their access.
• Increasing access of behavior-analytic technology to medical providers could decrease the prevalence of challenging behavior in individuals by providing prevention and increasing appropriate referrals for services to children and families by medical providers.

METHOD

Participants, Settings, and Materials
• Participants included 76 children with intellectual and/or developmental disabilities (IDD) and their caregivers referred to a psychiatric inpatient or outpatient clinic for behavioral and medication management of severe problem behavior.
• M Age: 10.82 years (range, 5-17 years)
• Sessions were conducted in classrooms on the psychiatric unit, measuring approximately 13.8 m x 12.4 m and containing 6 chairs, leisure items, and demand materials

Experimental Design and Dependent Variable
• The experiment consisted of a FOB-MED administration, functional analysis of problem behavior, and validity analysis.
• Dependent variables for the current study were the rate of problem behavior (e.g. aggression, self-injury, property destruction, negative statements, elopement, etc.).

Procedures
• FOB-MED administration
  • Upon arriving for the first day of the program, a nurse transitioned the child’s caregiver into a private office. Following consent documentation, the nurse completed the FOB-MED with the parent.
• Functional Analysis of Problem Behavior
  • A functional analysis of problem behavior was conducted according to procedures described by Iwata et al. (1982/1994). Sessions were 5 min in duration, and the following series was completed 3 times or until a clear distinction was observed.
    • Attention
    • Free Play
    • Escape
    • Tangible

METHOD – DATA ANALYSIS

Sensitivity: Function identified on FOB-MED correctly identified by FA (i.e. identifying true positives)
  • True positive / (true positive + false negative) X 100

Specificity: Function not identified on FOB-MED correctly not identified by FA (identifying true negatives)
  • True negative / (true negative + false positive) X 100

Positive Predictive Value (PPV): Actual proportion of FOB-MED function, actually identified on FA
  • True positive / (true positive + false positive)

Negative Predictive Value (NPV): Actual proportion of FOB-MED function, also not identified also not identified on FA
  • True negative / (true negative + false negative) X 100

RESULTS – ACCURACY

<table>
<thead>
<tr>
<th></th>
<th>Attention</th>
<th>Tangible</th>
<th>Demand</th>
<th>Overall</th>
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</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>84%</td>
<td>97%</td>
<td>96%</td>
<td>93%</td>
</tr>
<tr>
<td>Specificity</td>
<td>21%</td>
<td>3%</td>
<td>13%</td>
<td>28%</td>
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RESULTS – VALIDITY

• Sensitivity was high (93% overall, range 84%-100%), indicating over 80% likelihood of identifying a true function of behavior.
• Negative predictive value was also high (91% overall, range 67%-100%), giving practitioners confidence that negative FOB-MED results are indicative of absence of function identified by FA.
• Other comparisons have resulted in concordance rates between indirect measures and functional analyses between 44% (Paclawskyj et al., 2001) and 64% (Iwata et al., 2013).
• This data suggests that the FOB-MED is a highly sensitive screening tool that can be used by non-behavior-analytic practitioners to assess for potential functions of behavior.
• Practitioners have confidence (>75%) that negative results on FOB-MED for Escape and Attention can rule out functions.
• Considerations for primary care and other medical settings to provide initial function-based interventions or refer for a more appropriate assessment.
• Limitations of the current study:
  • Cultural implications - although the FOB-MED has a Spanish version, this study was conducted amongst predominantly Caucasian, English-speaking children and families.
  • The language and cultural barrier(s) may create some confusion regarding functions of behavior and their operational definitions.
  • Functions of behavior were limited to social reinforcement (attention, escape, and tangible) and did not include automatic reinforcement.

REFERENCES