Creation of a Mobile Online Tool For Assessment With the Bush-Francis Catatonia Rating Scale

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INTRODUCTION

Catatonia is an underdiagnosed condition, partially due to significant inaccuracies in clinicians' recognition of its features.[1] An online curriculum improved identification of catatonia's features across all ages and training levels with good overall knowledge retention.[2] This current project aims to extend the utility and accessibility of these online curricula by creating a mobile online tool that functions as a digital scoring assistant for the Bush-Francis Catatonia Rating Scale (BFCRS).[3] This new online tool will provide ready access to these resources at the point of care for clinicians of all training levels.

METHOD

Using an online, calculator platform (interactivecalculator.com), we created an assessment tool optimized for mobile devices that sequences the BFCRS based on a structured clinical assessment. The tool (**Figure 1**) features:

- Calculator and results for both the 14-item screening instrument and 23-item full BFCRS
- Instructions on observing, examining, and eliciting findings
- Links for detailed explanation of each item from the Training Manual and Coding Guide, including common examples of features and differentiating individual features
- Embedded videos of standardized patient assessment and item scoring for each feature of catatonia that the user can launch when desired.
- Ability to send results via email

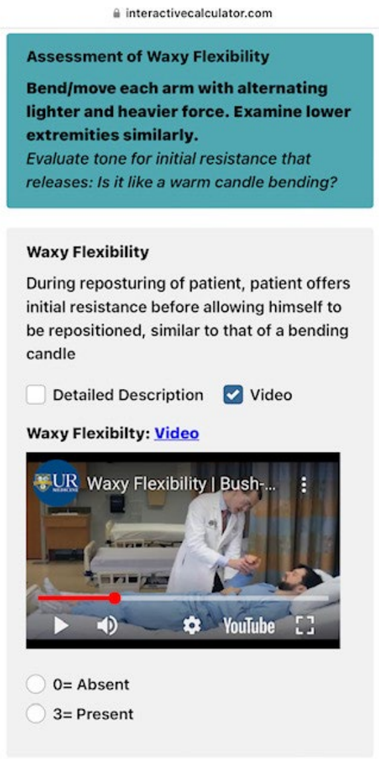
As part of a quality improvement project, the tool was evaluated by volunteer attendings, fellows, residents, and medical students from the NYULH CL Psychiatry service. Participants were asked to rate a recorded, standardized patient using a paper BFCRS and then rate a different recorded, standardized patient using the mobile tool. The order of the patient video was randomized. Afterward, the user completed a short survey. We compared the number of correctly scored items between paper and online assessment.

RESULTS

A total of 7 volunteers evaluated the standardized patients and returned the survey. One volunteer did not complete the paper BFCRS task.

- Most volunteers reported positive impressions, satisfaction with usability, and overall satisfaction of the tool; agreed that it helps accurately assess and teach the features of catatonia (**Figures 2a-e**).
- Six volunteers (85%) agreed that they were somewhat or extremely likely to use this tool at the point of care (**Figure 2f).**
- Four of the six volunteers (67%) showed improved accuracy (online tool compared to paper) based on the proportion of accurately scored items (**Figure 3**). The average proportion of correctly scored items increased from 71% (paper) to 79% (mobile online tool).

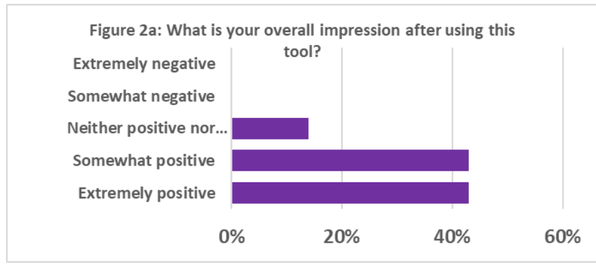
FIGURE 1

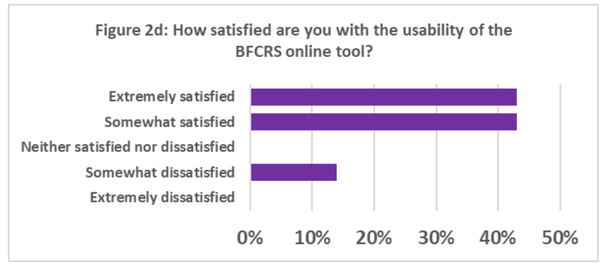


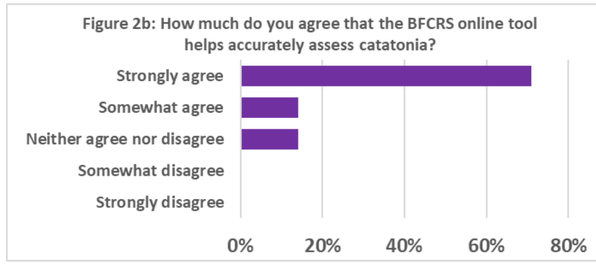
Scan QR code or type in link below

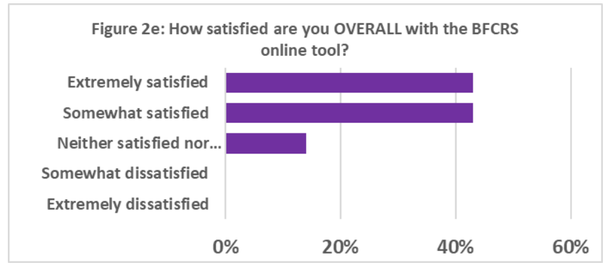
tinyurl.com/catatoniacalc

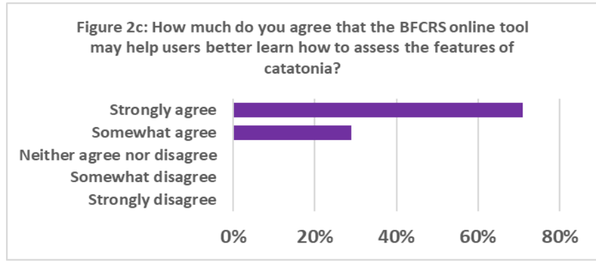
FIGURES 2a-f

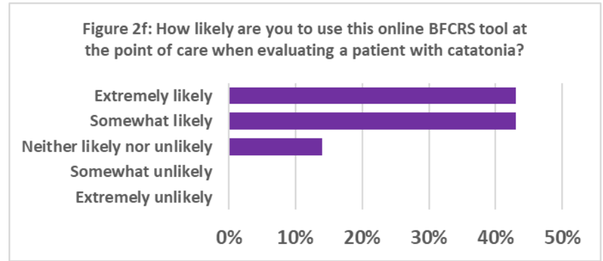








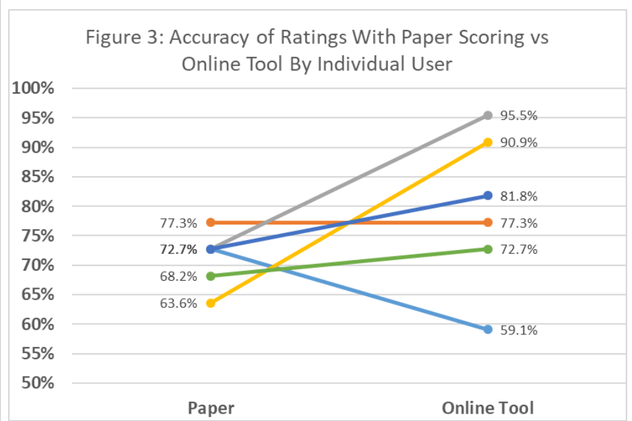




CONCLUSION

Preliminary data suggest that this new mobile online tool for scoring the BFCRS has near unanimous user satisfaction with very high self-rated likelihood of adoption for point of care assessment. Use of this tool was also associated with higher accuracy in using the BFCRS relative to use of the paper BFCRS.

FIGURE 3



REFERENCES

1. Wortzel JR, Maeng DD, Francis A, Oldham MA. Prevalent gaps in understanding the features of catatonia among psychiatrists, psychiatry trainees, and medical students. J Clin Psychiatry. 2021.
2. Wortzel JR, Maeng DD, Francis A, Oldham MA. Evaluating the Effectiveness of an Educational Module for the Bush-Francis Catatonia Rating Scale. Acad Psychiatry. 2022.
3. Bush G, Fink M, Petrides G, Dowling F, Francis A. Catatonia. I. Rating scale and standardized examination. Acta Psychiatr Scand. 1996.