REDUCTION OF THE MENTAL HEALTH GLOBAL STATE SCALE FOR CHILDREN FOR ITS USE IN HUMANITARIAN INTERVENTIONS

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BACKGROUND AND OBJECTIVES

Populations exposed to violence face an increased risk of mental health consequences, affecting the most vulnerable ones, such as children. During humanitarian crises, patient access to health care services is often sporadic and inconsistent, making the optimization of time and resources crucial. Consequently, this study aims to validate a reduced version of the Mental Health Global State (MHGS) scale for children to reduce the burden on patients and practitioners in Mental Health and Psychosocial Support (MHPSS) programs.

METHODS

This study retrospectively analysed routinely collected clinical data from 5324 <15 years old patients presenting for MHPSS services at facilities supported by Médecins Sans Frontières (MSF) in the occupied Palestinian Territories and Colombia from 2013, and Nigeria from 2018, to 2022. Patient symptoms severity and improvement were assessed by an attending psychologist or counsellor with the Clinical Global Impression (CGI) and MHGS scales. Exploratory factor analysis (EFA) was performed to better understand the internal construct of the scale, determine correlations and reduce the questionnaire. Internal consistency, confirmatory factor analysis (CFA), convergent validity, and sensitivity to change tests were carried out to validate the reduced version of the children MHGS scale in a variety of contexts and languages.

RESULTS

EFA was performed on a 14-item scale version, resulting in an 8-item questionnaire proposal, demonstrating adequate internal consistency (Cronbach alpha 0.75) (Table 1). The reduced 8-question version was confirmed through CFA goodness of fit testing in the three contexts (Table 1 footnotes). Convergent validity was tested between MHGS and CGI scale, showing moderate-to-strong statistically significant correlations ($p<0.001$) for all comparisons (Table 2). The long and short children's versions of MHGS showed statistically significant sensitivity to change between baseline at admission and closure (Wilcoxon Signed Rank Test, $p<0.05$). The scale showed moderate sensitivity (79.9%) and specificity (61.7%) against CGI scale, correctly classifying 76.4% of patients, and setting a 5-point recommended Minimum Clinically Important Difference (MCID) (Figure 1).
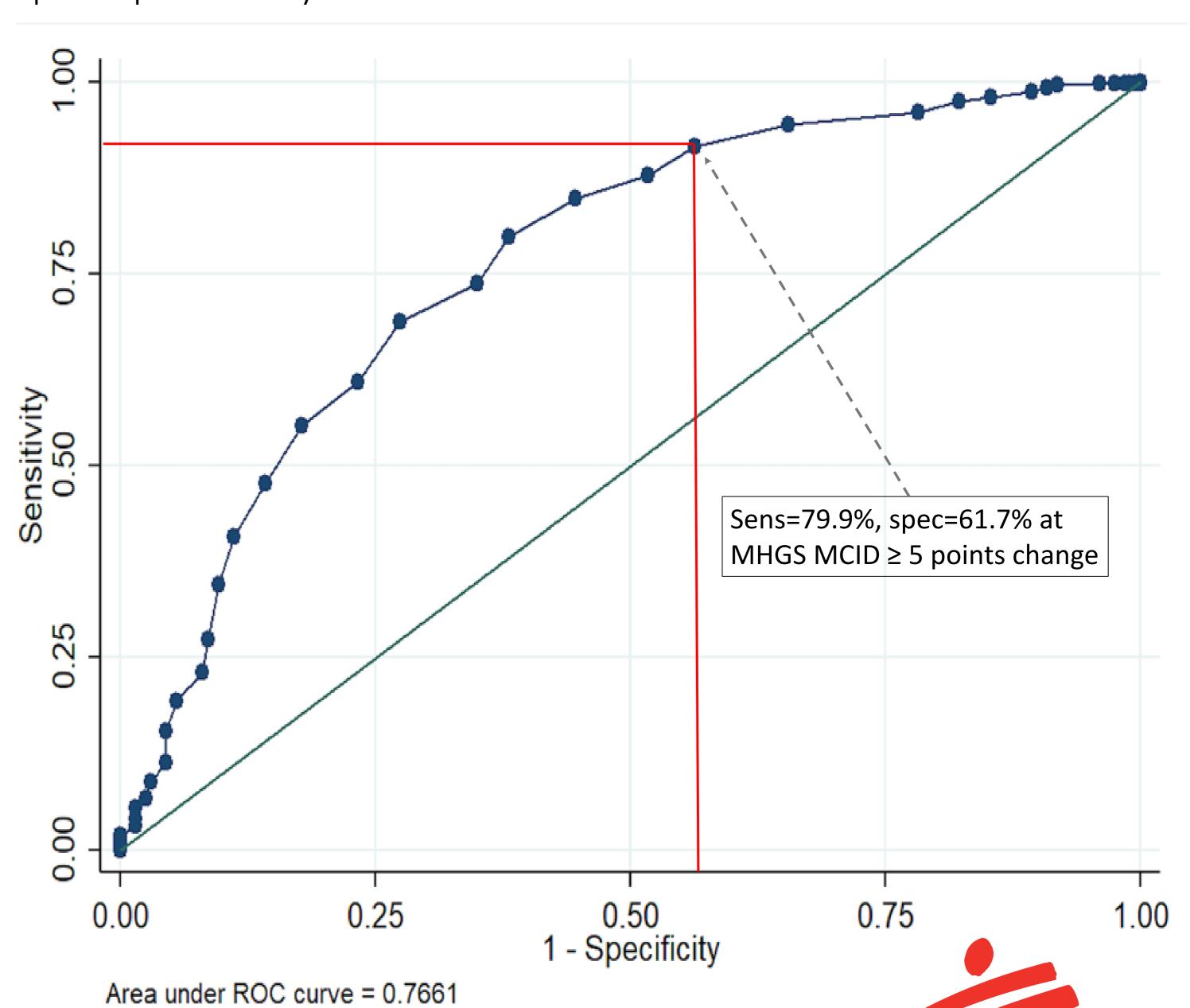
CONCLUSION

The resulting 8-question version of the MHPSS scale for children has proven to be an effective and quick-to-use tool for evaluating change in symptom severity and function from the child´s caretaker perspective. Combined with the practitioner´s appraisal through CGI, it will be useful for evaluating patients' mental health outcomes, monitoring MHPSS programs and ultimately to help to improve the delivery of care and alleviate the mental health suffering of affected populations.

ETHICS

This study was approved by the MSF ERB (1332 amendment 14/1/24) and Hosp. Univ. S. Jose ERB, Cauca, Colombia; exemption from Palestinian MoH; exemption from MSF ERB for Nigeria database. Approved for submission by the MSF OCBA Medical Director.

Table 1 and 2 – EFA, Cronbach-Alpha and CFA for the reduced version of baseline MHGS measures. Spearman Correlation of full and reduced 8-question version of the children version of MHGS against CGI scales at baseline assessment, Cauca, Colombia.

MHGS items or questions	Factor loading	Factor	Uniqueness	Cronbach's alpha
Q1) in the past week how well has the child been feeling?	0.551	1 (Symptoms)	0.604	0.791
Q6) did the child have problems sleeping?	0.533		0.690	
Q11) was the child sad or irritable?	0.588		0.499	
Q12) was the child worried or scared?	0.634		0.575	
Q13) has the child been crying?	0.658		0.564	
Q14) has the child been suffering?	0.725		0.466	
Q3) did the child have problems getting along with others?	0.632	2 (Function)	0.547	0.651
Q8) did the child behave poorly?	0.599		0.637	

CFA goodness of fit results: RMSEA = 0.098 (acceptable model fit if <0.8), CFI = 0.919 and 0.944 (acceptable model fit if >0.9) chi-squared test p<0.001 (acceptable model fit if p>0.05), and SRMR = 0.055 and 0.04 (acceptable model fit if <0.1)

MHGS scale:	Full	8-version
CGI Severity	0.57*	0.56*
CGI Severity closure	0.71*	0.71*
CGI Improvement	-0.41*	-0.41*

*(p<0.001)

Figure 1 - ROC curve for score change in the 8-question version of MHGS for children compared to ≥ 3 point improvements by CGI.

Sens=79.9%, spec=61.7% at MHGS MCID ≥ 5 points change

Area under ROC curve = 0.7661