Outcomes Star™ Psychometric Factsheet: Attention Star™

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Background

The Attention Star is the Outcomes Star for attention, learning and behaviour. It was developed for use with children and young people aged between 5 and 18, who have difficulty paying attention, learning and/or with their behaviour at school or in other situations. The Attention Star was developed by Triangle with Norfolk Community Health and Care Trust.

More information about the Attention Star can be found in the User Guide (Burns, MacKeith & Greaves, 2018) and the overall principles behind the development of all versions of the Outcomes Star are described in MacKeith (2011).

Method and analytic strategy

Routinely collected Attention Star data entered onto the Star Online by a UK charity was analysed to test the Star's validity as an outcomes measurement tool. These psychometric tests were conducted using anonymised data from 374 first Star readings and 298 reviews. The average time between 1st and 2nd Star readings was 70 days.

A full explanation of the analytic strategy is provided in the accompanying document – Outcomes Star Psychometric Factsheets: Overview.

Results

Does it make sense for the different outcome areas of the Star to be included in the same tool?

Factor Structure: The Kaiser-Meyer-Olkin value exceeded the recommended minimum value of 0.60 (Kaiser, 1970, 1974) and a significant Bartlett's Test of Sphericity (Bartlett, 1954) supported the suitability of the data for factor analysis. The analysis yielded a unidimensional factor structure explaining 56% of the variance in the data.

Internal Consistency Internal consistency was good (Cronbach's α =.78).

> **Is each outcome area measuring a unique aspect of the service user's situation?**
>
> **Item redundancy:** No inter-item correlation exceeded the 0.7 threshold, suggesting no redundancy between areas (see Table 1).

> **Does the Star detect change occurring within a service?**
>
> **Responsiveness to change:** The Wilcoxen Signed Rank Test revealed a statistically significant increase in all outcome areas (see Table 2), with medium effect sizes for four areas (Family, Friends, Being healthy and How you feel) and small-medium effects for the other four areas (School and learning, Your routine, How you behave and Attention and organisation).
>
> Averaged across outcome areas, 43% of service users began at the highest point on the Journey of Change, and therefore this test of responsiveness looked only at those who started below this point and could therefore move forward.

Conclusions

The results of these initial analyses are encouraging and suggest that the Attention Star is a valid outcomes measurement tool, with a unidimensional, internally consistent factor structure and good responsiveness. Research is planned to examine inter-rater reliability and the relationship between Star readings and other measures (convergent and predictive validity).

Additional research

External research about the Star as an outcomes and keywork measure can be found on our website: http://www.outcomesstar.org.uk/about-the-star/evidence-and-research/research-library/#all

Table 1. Polychoric correlation matrix for outcome areas (*N* =374)

	1	2	3	4	5	6	7
1 School and learning							
2 Your routine	.29						
3 Family	.29	.38					
4 Friends	.31	.27	.34				
5 Being healthy	.25	.30	.26	.36			
6 How you feel	.38	.39	.53	.57	.27		
7 How you behave	.31	.32	.46	.33	.26	.49	
8 Attention and organisation	.46	.24	.30	.35	.29	.40	.44

Table 2. Responsiveness of the Attention Star[1]

	First Star median	Final Star median	Z	Effect size[2] r	N
School and learning	4.00	4.00	-3.86***	0.20	181
Your routine	4.00	4.00	-4.83***	0.26	178
Family	3.00	4.00	-4.95***	0.33	110
Friends	3.00	4.00	-5.58***	0.35	130
Being healthy	4.00	4.00	-6.07***	0.36	146
How you feel	3.00	4.00	-7.74***	0.40	192
How you behave	4.00	4.00	-5.37***	0.27	192
Attention and organisation	3.00	4.00	-5.33***	0.26	211

***$p <.001$

[1] Those who began at the highest point on the Journey of change (and therefore who could not move forward) were excluded

[2] Cohen provided rules of thumb for interpreting these effect sizes, suggesting that an *r* of .1 represents a 'small' effect size, .3 represents a 'medium' effect size and .5 represents a 'large' effect size

Bartlett, M. S. (1954). A note on the multiplying factors for various χ 2 approximations. *Journal of the Royal Statistical Society. Series B (Methodological)*, 296-298.

Burns, S., MacKeith, J. & Greaves, S. (2018) The Attention Star User Guide (2nd Ed.). Brighton: Triangle Consulting

Kaiser, H.F. (1970). A second generation little jiffy. Psychometrika, Vol. 35, pp. 401-15.

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MacKeith, J., (2014). Assessing the reliability of the Outcomes Star in research and practice. *Housing, Care and Support*, *17*(4), 188-197.