

Outcomes Star™ Psychometric Factsheet: Family Star (Early Years)™

Author: Dr Anna Good; Triangle Consulting Social Enterprise Ltd

Background

The Family Star (Early Years) is a variant of the Family Star specifically designed for use with young children (0 to 5 Years) and in lighter-touch interventions. Ideally suited for Children's Centres, it has fewer and shorter scales for ease of use, as well as a specific scale for early Years – Child Development.

It was developed by Triangle with the Royal Borough of Kensington and Chelsea Early Help and Children's Centres Services.

More information about the Family Star (Early Years) can be found in the Worker Guide (Burns, MacKeith & Greaves, 2017) and the overall principles behind the development of all versions of the Outcomes Star are described in MacKeith (2011).

Method and analytic strategy

Family Star (Early Years) data routinely collected and entered onto the Star Online was analysed by Triangle to test the Star's validity as an outcomes measurement tool. These psychometric tests were conducted using anonymised data ($N = 112$) collected by a community interest group in the UK. The average time between 1st and 2nd Star readings was 65 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 72% of the variance in the data.

Internal Consistency Internal consistency was very good (Cronbach's $\alpha = .87$).

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 Wilcoxon Signed Rank Test revealed a statistically significant increase in all outcome areas (see Table 2), with medium effect sizes for four areas (Physical health, Emotional wellbeing, Social networks and Child development) and small-medium effects for three areas (Keeping safe, Boundaries and routine and Home, money and work).

In the three areas with smaller effects, on average 24% of service users began at 5 (the highest Journey of Change stage). When these service users who could not move forward were excluded, the effect sizes were medium (Keeping your children safe: $r = 0.46$, Boundaries and routine: $r = 0.39$, Home, money and work: $r = .36$).

Conclusions

The results of these initial analyses are encouraging and suggest that the Family Star (Early Years) is a valid outcomes measurement tool, with a unidimensional factor structure, internal consistency 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. Correlation matrix for outcome areas (N =112)

	1	2	3	4	5	6
1 Physical health						
2 Emotional wellbeing	.63					
3 Keeping your children safe	.55	.58				
4 Social networks	.46	.58	.37			
5 Boundaries and routines	.50	.59	.51	.41		
6 Child development	.60	.51	.49	.43	.59	
7 Home, money and work	.50	.48	.35	.44	.45	.39

Table 2. Responsiveness of the Family Star (Early Years) (N =112)

	First Star median	Final Star median	Z	Effect size r^2
1 Physical health	4.00	4.00	-4.77***	0.32
2 Emotional wellbeing	3.00	4.00	-4.85***	0.32
3 Keeping your children safe	4.00	5.00	-3.83***	0.26 ²
4 Social networks	3.00	4.00	-4.44***	0.30
5 Boundaries and routines	4.00	4.00	-2.84**	0.19 ²
6 Child development	4.00	4.00	-5.26***	0.35
7 Home, money and work	3.00	4.00	-4.38**	0.29 ²

*** $p < .001$ ** $p < .01$

¹ 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

² When service users beginning at the highest point on the Journey of Change were excluded, these effect sizes were medium (Keeping your children safe: $r = 0.46$, Boundaries and routine: $r = 0.39$, Home, money and work: $r = .36$)

References

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.

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