Outcomes Star™ Psychometric Factsheet: Parent and Baby Star™

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Background

The Parent and Baby Star is a version of the Outcomes Star for parents who may need extra support in the perinatal period (during pregnancy and the first year after having a baby). It was developed by Triangle in collaboration with The Stefanou Foundation, East and North Hertfordshire Clinical Commissioning Group, Herts Valleys Clinical Commissioning Group and Hertfordshire County Council.

More information about the Parent and Baby Star can be found on the Triangle website and in the Development Report: https://www.outcomesstar.org.uk/using-the-star/see-the-stars/parent-and-baby-star/

Method and analytic strategy

Parent and Baby Star data that was routinely collected and entered onto the Star Online by health visitors in England was analysed by Triangle to confirm the validity of the published Parent and Baby Star. A full explanation of the analytic strategy is provided in the accompanying document – Outcomes Star Psychometric Factsheets: Overview.

In total, 197 service users were included, all of whom had a review reading.

Results

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

Factor Structure: All inter-items correlations were above .30 supporting the inclusion of the outcome areas in the same tool, 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. This analysis yielded a unidimensional factor structure explaining 40.1% of the variance in the data. Internal consistency was acceptable (Cronbach's α = .64).

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: Wilcoxon Signed Rank Test comparing 1st and 2nd Star readings revealed statistically significant change for all outcome areas. After excluding those who could move forward (who began at 5 on the individual outcome areas), the effect size was large for three outcomes areas, and medium-large for the other three areas ($p < .001$, See Table 2).

Conclusion

The results of these initial analyses are encouraging and suggest that the Parent and Baby Star is a valid outcomes measurement tool, with a single underlying construct and good responsiveness to change.

We are keen to examine consistency in understanding of the scales (inter-rater reliability) and the relationship between Star readings and other measures (convergent and predictive validity). Please contact us if you have Parent and Baby Star data and would like to be involved in this research.

Further 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 = 197)

	1	2	3	4	5	6
1. Mental and emotional health						
2. Physical health	.20					
3. Housing and essentials	.11	-.11				
4. Relationship	.35	.15	.20			
5. Support network	.29	.12	.15	.36		
6. Looking after your baby	.29	.27	.18	.15	.36	
7. Connecting with your baby	.52	.29	.22	.22	.22	.64

TABLE 2: Responsiveness of the Parent and Baby Star: 1st to 2nd readings excluding service users starting at 10 who could not move forward

Scale	Time 1 Median	Time 2 Median	Wilcoxon statistic Z	Effect size r	N
Mental and emotional health	3	4	-7.32***	.41	160
Physical health	3	4	-8.29***	.47	154
Housing and essentials	4	4	-4.39***	.40	61
Relationship	4	4	-6.34***	.50	80
Support network	4	4	-7.00***	.48	106
Looking after your baby	4	5	-6.60***	.52	82
Connecting with your baby	4	5	-6.34***	.56	65

*** $p < .001$

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.

Kaiser, H. F. (1970). A second generation little jiffy. Psychometrika, 35(4), 401-415

Kaiser, H. F., & Rice, J. (1974). Little jiffy, mark IV. Educational and psychological measurement, 34(1), 111-117.

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