

Outcomes Star™ Psychometric Factsheet: Home Star™

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Background

In April 2022, Triangle launched the Home Star, an improved and updated version of the Outcomes Star for housing and other needs (known as the Homelessness Star). The Homelessness Star has been updated several times over the years, in response to feedback and new learning. Since the most recent edition (3.1) was published in 2017, much has changed – in the sector, the clients accessing services, increased economic pressures and housing challenges – and Triangle has learned a lot about use of language and accessibility, including being more trauma-informed and client-centred. The Home Star was developed in response to these changes and was grounded in extensive feedback and consultation.

More information about the Home Star can be found on the Triangle website and in the Development Summary: <https://www.outcomesstar.org.uk/wp-content/uploads/Home-Star-development-process.pdf>

Method and analytic strategy

Home Star data that was routinely collected and entered onto the Star Online by 11 organisations was analysed by Triangle to confirm the validity of the Home Star as an outcomes measurement tool. In total, 427 service users were included, all of whom had a review reading. These service users were aged between 16-77 years old ($M = 35.5$), and of those reporting gender, 59% identified as female ($N = 220$) and 41% as male ($N = 154$).

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: 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 69.1% of the variance in the data.

Internal Consistency: Internal consistency was good (Cronbach's $\alpha = .92$).

Is each outcome area measuring a unique aspect of the service user's situation?

Item redundancy: Very few inter-item correlations (4 out of 45) exceeded the 0.7 threshold, and all were smaller than 0.8, suggesting little redundancy between areas (see Table 1).

The highest correlations were Friends and relationship correlating with My well-being and How I spend my time, and My health correlating with My well-being and Trust and hope.

Does the Star detect change occurring within a service?

Responsiveness to change: Wilcoxon Signed Rank Test comparing 1st and review Star readings revealed statistically significant change for all outcome areas. After excluding those who could move forward (who began at 10 on the individual outcome areas), over 60% of service users progressed in each area and the effect size was medium or medium-large for all outcomes areas - ranging from $r = 0.37$ to 0.456 ($p < .001$, see Table 2).

The results when including service users who could not move forward (because they began at 10 on the individual outcome areas) are shown in Table 3.

Conclusion

The results of these initial analyses are encouraging and suggest that the Home Star is a valid outcomes measurement tool, with a single underlying construct and responsiveness to positive changes.

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 Home 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 = 427)

	1	2	3	4	5	6	7	8	9
1. Where I am living	-								
2. Caring for myself & my space	.46	-							
3. My money	.52	.46	-						
4. Friends and relationships	.46	.63	.63	-					
5. My health	.43	.58	.52	.66	-				
6. My well-being	.45	.64	.49	.73	.73	-			
7. How I spend my time	.48	.66	.63	.80	.69	.68	-		
8. Alcohol and drugs	.36	.58	.41	.59	.57	.58	.57	-	
9. Safety and crime	.49	.57	.45	.64	.66	.66	.58	.69	-
10. Trust and hope	.51	.54	.52	.65	.74	.66	.66	.53	.57

TABLE 2: Responsiveness of the Family Star (Relationships): 1st to 2nd readings excluding service users starting at 10 who could not move forward

Scale	Time 1	Time 2	Wilcoxon	Effect	Readings	N
	Median	Median	statistic	size ¹	improved	
	(IQR)	(IQR)	Z	r		
1. Where I am living	7 (6-10)	8 (6-10)	-10.74***	0.38	66%	395
2. Caring for myself & my space	8 (6-9)	8 (7-10)	-9.31***	0.41	66%	256
3. My money	7 (6-8)	8 (7-10)	-10.57***	0.40	64%	357
4. Friends and relationships	7 (5-8)	8 (6-10)	-9.32***	0.41	71%	254
5. My health	7 (6-8)	8 (7-10)	-9.15***	0.37	61%	305
6. My well-being	7 (5-8)	8 (6-10)	-9.15***	0.39	67%	305
7. How I spend my time	7 (6-8)	9 (7-10)	-9.66***	0.41	72%	278
8. Alcohol and drugs	7 (5-8)	8 (7-10)	-6.20***	0.39	63%	127
9. Safety and crime	7 (5-8)	8 (7-10)	-8.19***	0.46	74%	162
10. Trust and hope	7 (6-8)	8 (7-10)	-11.15***	0.42	71%	352

*** $p < .001$

¹ Cohen (1988) 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

TABLE 3: Responsiveness of the Family Star (Relationships): 1st to 2nd readings including service users starting at 10 who could not move forward

Scale	Time 1 Median (IQR)	Time 2 Median (IQR)	Wilcoxon statistic Z	Effect size r	Readings improved
1. Where I am living	7 (6-8)	8 (7-10)	-10.51***	0.36	61%
2. Caring for myself & my space	9 (7-10)	10 (8-10)	-7.55***	0.26	40%
3. My money	8 (6-9)	9 (7-10)	-9.26***	0.32	54%
4. Friends and relationships	8 (7-10)	10 (7-10)	-7.59***	0.26	43%
5. My health	8 (7-10)	9 (7-10)	-7.90***	0.27	43%
6. My well-being	7 (6-9)	9 (7-10)	-8.72***	0.30	53%
7. How I spend my time	8 (7-10)	10 (8-10)	-8.15***	0.28	47%
8. Alcohol and drugs	10 (9-10)	10 (8-10)	-4.08***	0.14	19%
9. Safety and crime	10 (8-10)	10 (9-10)	-6.19***	0.21	28%
10. Trust and hope	8 (6-9)	9 (7-10)	-10.34***	0.35	58%

*** $p < .001$

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.

Cohen, J. 1988. *Statistical power analysis for the behavioral sciences*, Hillsdale, NJ: Lawrence Erlbaum.

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.