

## Outcomes Star™ Psychometric Factsheet: Life Star™

### Background

The Life Star is a version of the Outcomes Star for young people and adults with learning disabilities. It was developed by Triangle with 10 collaborators<sup>1</sup> including four NHS Trusts, one local authority and five service providers from the voluntary and independent sectors, and funding via a grant from the London Housing Foundation.

The collaborators contributed to the outcome areas and Journey of change and provided feedback on the tool as part of an iterative process of development and refinement. Eight collaborators piloted the draft version of the Life Star within their services over a 4-month period. More information about the development of the Life Star can be found in the organisation guide (Burns & MacKeith, 2012) and the overall principles behind the development of all versions of the Outcomes Star are described in MacKeith (2011).

### Method and analytic strategy

Data on the acceptability and content validity of the pilot version was gathered using questionnaires completed by service users (n =103) and keyworkers (n = 89) in services provided by the collaborators at the end of the 4-month pilot period.

Life Star data routinely collected and entered onto the Star Online was analysed by Triangle to test the Star's validity as an outcomes measurement tool. A full explanation of the analytic strategy is provided in the accompanying document – Outcomes Star Psychometric Factsheets: Overview.

These psychometric analyses used anonymised data collected by a UK charity supporting people in the community who have a learning disability, mental health problems, Autism and who are/ have been homeless.

In total, 193 service users with at least one review Star reading were included. Service users were aged between 16 and 78 (M = 44.77), the vast majority were White British (95%) and there were slightly more males (53%) than females. In terms of support needs, 87% had a learning disability, 21% had a physical disability, 21% had mental health issues and 15% had autism.

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<sup>1</sup> United Response, Care Principles, Partnerships in Care, Avon and Wiltshire MH Trust, Dorset Healthcare Foundation Trust, East Midlands NHS Resource Hub, Cheshire and Wirral NHS Trust, Warrington LD Partnership, Castlebeck, Tees, Wier Valley and Esk NHS Trust

***Do service users and workers view the Star as appropriate and useful?***

**Acceptability and Content validity:** The majority of service users reported enjoying completing the Life Star (83%) and felt that it showed what they were good at and where they needed support (79%).

Almost all of the keyworkers felt that the Life Star described their service users' needs well (95%) and only 16% reported that it took too long to complete.

***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, 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 77% of the variance in the data.

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

***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 revealed a statistically significant increase in all outcome areas (see Table 2). Small-medium effect sizes were found for all areas except for Being Safe and Mental health and other conditions (which had small effect sizes).

## Conclusion

These initial psychometric analyses are encouraging and suggest that the Life Star is a valid outcomes measurement tool, which measures a single underlying construct and is responsiveness to change.

Research is planned to examine consistency in understanding of the scales (inter-rater reliability) and the relationship between Star readings and other measures (convergent and predictive validity).

## 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: Correlation matrix for outcome areas (N = 193)**

	1	2	3	4	5	6	7	8	9
1 Your health									
2 How you spend your time	.57								
3 Being responsible	.58	.52							
4 Being safe	.49	.55	.71						
5 Money and letters	.42	.45	.48	.55					
6 Living skills	.55	.48	.51	.52	.55				
7 Communicating	.53	.51	.59	.51	.39	.42			
8 Feeling good	.53	.57	.58	.56	.43	.40	.59		
9 People you know	.49	.59	.51	.52	.42	.42	.57	.63	
10 Mental health and other conditions	.40	.37	.53	.50	.37	.45	.47	.49	.41

**TABLE 2: Responsiveness of the Life Star (N = 193)**

	First Star median	Final Star median	Z	Effect size $r^2$
1 Your health	6.00	6.00	-2.85**	0.15
2 How you spend your time	7.00	8.00	-3.44**	0.18
3 Being responsible	7.00	7.00	-3.16**	0.16
4 Being safe	7.00	8.00	-2.32*	0.12
5 Money and letters	7.00	7.00	-2.92**	0.15
6 Living skills	6.00	7.00	-3.39**	0.17
7 Communicating	7.00	8.00	-3.92***	0.20
8 Feeling good	7.00	8.00	-4.55***	0.23
9 People you know	8.00	8.00	-2.84**	0.14
10 Mental health and other conditions	8.00	8.00	-2.18*	0.11

\*\*\* $p < .001$  \*\* $p < .01$  \* $p < .05$

<sup>2</sup> 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  $\chi^2$  approximations. Journal of the Royal Statistical Society. Series B (Methodological), 296-298.

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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.