

## Outcomes Star™ Psychometric Factsheet: Recovery Star™ (3<sup>rd</sup> Edition)

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### Background

The Recovery Star is a version of the Outcomes Star for adults of working age who are managing their mental health or recovering from mental illness. It was originally published in 2008, with a third edition in 2013.

Triangle were commissioned to develop the Recovery Star by the Mental Health Providers Forum and collaborated with nine projects in five mental health organisations, including a floating support service, a supported housing service, day centres, training and employment services, and a residential care home.

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. They also piloted the draft version of the Recovery Star within their services over a six-month period. More information about the development of the Recovery Star can be found in the organisation guide (Burns, MacKeith & Graham, 2014) and the overall principles behind the development of all versions of the Outcomes Star are described in MacKeith (2011).

### Method and analytic strategy

Recovery Star (3rd Edition) data routinely collected and entered onto the Star Online by 10 organisations 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.

In total, 4328 service users were included, of which 1975 had a review Star reading. Service users were aged between 16 and 86 ( $M = 41.40$ ) and there were slightly more males (55%) than females. Of the 3434 service users with ethnicity recorded, the majority were White British, Irish or White 'other' (88%).

### Results

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

**Factor Structure:** Most 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), supporting the suitability of the data for factor analysis. This analysis yielded a unidimensional factor structure explaining 54% of the variance in the data.

**Internal Consistency:** Internal consistency was very good (Cronbach's  $\alpha = .86$ ).

***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). A medium effect size was found for Managing mental health and small-medium effect sizes for all other areas.

## Conclusion

The results of these initial analyses are encouraging, suggesting that the Recovery Star is a unidimensional, internally consistent tool, which is responsive to change, and adding to the existing literature showing that the Recovery Star is a valid outcomes measurement tool. Research is planned to examine the psychometric properties of the 4th Edition.

## Further research

External research about the Star as an outcomes and keyword 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 = 4328)**

	1	2	3	4	5	6	7	8	9
1 Managing mental health									
2 Physical health and self-care	0.54								
3 Living skills	0.44	0.56							
4 Social networks	0.49	0.44	0.41						
5 Work	0.33	0.36	0.39	0.38					
6 Relationships	0.35	0.35	0.31	0.44	0.31				
7 Addictive behaviour	0.26	0.28	0.30	0.22	0.26	0.25			
8 Responsibilities	0.35	0.39	0.50	0.30	0.32	0.33	0.41		
9 Identity & self-esteem	0.56	0.45	0.39	0.53	0.32	0.41	0.25	0.36	
10 Trust and hope	0.53	0.43	0.38	0.52	0.33	0.43	0.25	0.36	0.68

**TABLE 2: Responsiveness of the Recovery Star**

	First Star median	Final Star median	Z	Effect size $r^2$	n <sup>2</sup>
Managing mental health	5.00	6.00	-18.54***	0.30	1945
Physical health and self-care	5.00	6.00	-14.29***	0.23	1862
Living skills	6.00	7.00	-14.80***	0.25	1803
Social networks	5.00	6.00	-16.85***	0.27	1896
Work	5.00	5.00	-11.70***	0.19	1852
Relationships	5.00	6.00	-12.71***	0.21	1777
Addictive behaviour	6.00	7.00	-10.32***	0.20	1308
Responsibilities	7.00	8.00	-11.82***	0.21	1598
Identity & self-esteem	5.00	6.00	-17.67***	0.29	1903
Trust and hope	5.00	5.00	-15.78***	0.26	1890

\*\*\* $p < .001$

<sup>1</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

<sup>2</sup> Service users beginning at 10 were excluded since they could not move forward

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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