

## Outcomes Star™ Psychometric Factsheet: Recovery Star™ (4th edition)

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### Background

The Recovery Star is designed to be used as an integral component of one-to-one keywork within services supporting individuals with a wide range of short- and long-term mental health difficulties. The original Recovery Star was developed by Triangle in collaboration with the Association of Mental Health Providers (then MHPF) and funding from SITRA and Making Space.

The 4<sup>th</sup> edition of the Recovery Star improved on the original Recovery Star, with changes influenced by mental health professionals, organisations and commissioners and by the lived experience of service users. Contributors to the development included Research Net Bromley, Community Options, Sunderland Mind, Sheffield Mind, HEY Mind, Dr Lynne Friedli, Nick Karr, Midland Heart Housing Association, Sheffield County Council, Worcester NHS and Sheffield Local Authority.

The 4<sup>th</sup> edition covers a wider range of issues and acknowledges the importance of people being supported in ways that work for them, particularly if they have experience of trauma. Another significant change is the recognition that the goal of self-reliance in all areas is not always suitable, realistic or appropriate for people with severe and enduring mental health conditions (eight may be the top of the scale for some). This edition also further acknowledges that there are many external factors and conditions which will impact a person's recovery and that recovery isn't always a one directional staged journey.

More information about the development of the Recovery Star, including the 4<sup>th</sup> edition can be found in the [Development summary](#) 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 (4th edition) 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 tests were conducted using anonymised data from 644 service users who had at least two Star readings, collected within four organisations. The average time between the initial and final readings was three months.

## 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 .60 (Kaiser 1970, 1974) and a significant Bartlett's Test of Sphericity (Bartlett, 1954) supported the suitability of the data for factor analysis. The exploratory factor analysis yielded a unidimensional factor structure explaining 50% of the variance in the data.

**Internal Consistency** Internal consistency was very good (Cronbach's  $\alpha = .83$ ).

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

**Item redundancy:** No inter-item correlation exceeded the .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 and medium-large or large effect sizes in all outcome areas (see Table 2).

## Conclusions

The results of these initial analyses were encouraging and suggest that the 4<sup>th</sup> edition of the Recovery Star is a responsive unidimensional outcomes measurement tool. Addictive behaviour was not an issue for many service users so had weaker correlations with other outcome areas, but most inter-item correlations fell within the desired ranges. We recommend that Star readings should be considered at outcome area level rather than creating an average or total in most cases as this provides the most meaningful information. Responsiveness was good, and even when including people who had first Star readings of 10 (so could not move forward), there was a substantial change between readings.

We are keen to conduct further validation work on this version of the Star, so please get in touch if you have Star readings linked to hard outcomes or other validated tools.

A summary of external validation research about the Recovery Star as well as the original articles can be found on our website: <https://www.outcomesstar.org.uk/about-the-star/evidence-and-research/research-library/#tag-link-12>

**Table 1. Correlation matrix for outcome areas**

	1	2	3	4	5	6	7	8	9
1. Managing mental health									
2. Physical health	.41								
3. Living skills	.29	.46							
4. Friends and community	.37	.35	.33						
5. Use of time	.41	.38	.45	.50					
6. Relationships	.27	.25	.24	.49	.38				
7. Addictive behaviour	.08	.20	.24	.18	.18	.23			
8. Home	.17	.24	.39	.23	.27	.30	.23		
9. Identity and self-esteem	.50	.37	.29	.42	.40	.36	.13	.19	
10. Trust and hope	.48	.39	.30	.48	.48	.44	.16	.26	.62

**Table 2. Responsiveness of the Recovery Star (excluding service users who began at 10)**

	First Star median	Final Star median	Z	Effect size $r^2$	$n^2$
1. Managing mental health	5.00	8.00	-18.86***	0.53	630
2. Physical health	6.00	8.00	-15.35***	0.44	606
3. Living skills	7.00	8.00	-11.83***	0.40	433
4. Friends and community	6.00	7.50	-14.13***	0.43	538
5. Use of time	6.00	8.00	-16.15***	0.47	599
6. Relationships	6.00	8.00	-13.63***	0.42	524
7. Addictive behaviour	6.00	8.00	-10.70***	0.45	283
8. Home	7.00	9.00	-9.70***	0.36	367
9. Identity and self-esteem	5.00	7.00	-17.18***	0.50	601
10. Trust and hope	6.00	8.00	-16.25***	0.47	587

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

<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 when assessing responsiveness here because they could not move forward. Responsiveness including all service users is shown in Table 3.

**Table 3. Responsiveness of the Recovery Star (including service users who began at 10)**

	First Star median	Final Star median	Z	Effect size $r^2$
1. Managing mental health	5.00	8.00	-18.70***	0.52
2. Physical health	6.00	8.00	-14.73***	0.41
3. Living skills	8.00	9.00	-10.33***	0.29
4. Friends and community	6.00	8.00	-13.40***	0.37
5. Use of time	6.00	8.00	-16.22***	0.45
6. Relationships	7.00	8.00	-11.89***	0.33
7. Addictive behaviour	10.00	10.00	-9.51***	0.27
8. Home	9.00	10.00	-7.59***	0.21
9. Identity and self-esteem	5.00	8.00	-16.75***	0.47
10. Trust and hope	6.00	8.00	-15.61***	0.44

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

<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

## References

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