

## Outcomes Star™ Psychometric Factsheet: Carers Star™

### Background

The Carers Star was developed for use with anyone providing full time or part time unpaid care. It is primarily designed for adults but can be used with young carers. It was developed by Triangle alongside the Carers Trust and Social Enterprise of East Lothian.

More information about the Carers Star can be found in the Organisation guide (Burns, MacKeith & Pearse, 2014) and the overall principles behind the development of all versions of the Outcomes Star are described in MacKeith (2011).

### Method and analytic strategy

Carers 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.

With the exception of inter-rater reliability, these psychometric tests were conducted using anonymised data ( $N = 3439$ ) collected by a UK charity supporting unpaid carers. The average time between 1<sup>st</sup> and 2<sup>nd</sup> Star readings was 141 days. Inter-rater reliability was assessed using a sample of 47 Carer support workers and service managers using the Carers Star in another UK charity supporting carers.

### Results

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

**Acceptability:** A sample of 33 workers who used the Carers Star during the pilot reported that it gets carers engaged and talking openly about their role, increases self-awareness and helps them to deal with the issues in a manageable way. The workers also felt that it helped them to identify where support was needed.

#### *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 0.60 (Kaiser, 1970, 1974) and a significant Bartlett's Test of Sphericity (Bartlett, 1954) supported the suitability of the data for factor analysis. The analysis yielded a unidimensional factor structure explaining 62% of the variance in the data.

**Internal Consistency** Internal consistency was very good (Cronbach's  $\alpha = .78$ ).

***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:** The Wilcoxon Signed Rank Test revealed a statistically significant increase in all outcome areas (see Table 2), with medium effect sizes for four areas (The caring role, Time for yourself, How you feel and Finances) and small-medium effects for three areas (Health, Managing at home and Work).

For the three areas with smaller effect sizes, more than a third of service users began at 5 on the Journey of change and when these were excluded from the analyses, the effect sizes were medium for Health ( $r = .38$ ) Managing at home ( $r = .46$ ) and Work ( $r = .46$ ).

***Do workers have a consistent understanding of how to apply the scales?***

**Inter-rater reliability:** The average Krippendorff's  $\alpha$  of .88 across the cohort indicates very good inter-rater reliability, with only 1 of the 47 workers (2%) falling below the 0.67 threshold.

## Conclusions

The results of these initial analyses are encouraging and suggest that the Carers Star is a valid outcomes measurement tool, with high acceptability, a unidimensional factor structure, good responsiveness and inter-rater reliability. Research is planned to examine the relationship between Star readings and other measures (convergent and predictive validity).

## Additional 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. Polychoric correlation matrix for outcome areas (N =3439)**

	1	2	3	4	5	6
1 Health						
2 The caring role	.41					
3 Managing at home	.43	.45				
4 Time for yourself	.35	.48	.34			
5 How you feel	.54	.57	.42	.56		
6 Finances	.32	.28	.43	.25	.31	
7 Work	.31	.29	.38	.22	.30	.46

**Table 2. Responsiveness of the Carers Star (N =3439)**

	First Star median	Final Star median	Z	Effect size $r^1$
Health	4.00	4.00	-21.04***	0.25 <sup>2</sup>
The caring role	4.00	4.00	-30.07***	0.36
Managing at home	4.00	5.00	-24.08***	0.29 <sup>2</sup>
Time for yourself	3.00	4.00	-35.85***	0.43
How you feel	3.00	4.00	-33.19***	0.40
Finances	4.00	5.00	-27.21***	0.33
Work	5.00	5.00	-14.42***	0.17 <sup>2</sup>

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

<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> The effect size increases to .38 for Health and .46 for Managing at home and Work when service users beginning at 5 are excluded

## References

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.