

Outcomes Star™ Psychometric Factsheet: Well-being Star™

Background

The Well-being Star is a version of the Outcomes Star for people living with a long-term health condition, to support and measure their progress in living as well as they can. It was developed in 2013 by Triangle with North East Essex PCT and with funding from the Department of Health. A 2nd Edition was published in July 2018, which included updated guidance for workers, specific guidance for service users being supported to complete the Star themselves, and clearer and more consistent language throughout.

North East Essex PCT 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 Well-being Star within their services. More information about the overall principles behind the development of all versions of the Outcomes Star are described in MacKeith (2011).

Method and analytic strategy

Well-being 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 social enterprise providing a wide range of personal services aimed at improving people's health and wellbeing. In total, 1245 service users with at least one review Star reading were included. Service users were aged between 16 and 95 ($M = 43.23$), the majority were White British (85%) and there were more females (57%) than males. In terms of support needs, 37% had a specific support need recorded: 19% were not in work or training, 8% were parents of children under 18 and 6% had mental health issues.

Inter-rater reliability in a sample of 22 link workers in a social prescribing organisation in the UK.

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, 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 good (Cronbach's $\alpha = .82$).

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 large effect sizes was found for the Lifestyle area, Medium effect sizes for Looking after yourself, Managing symptoms, Work, volunteering and other activities and Feeling positive. The effect sizes for the other three areas were small-medium.

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

Inter-rater reliability: The average Krippendorff's α of .81 across the cohort indicates very good inter-rater reliability.

Conclusion

The results of these initial analyses are encouraging and suggest that the Well-being Star is a valid unidimensional outcomes measurement tool, which is internally consistent, responsive and can be consistently rated. Research is planned to examine 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 = 1245)

	1	2	3	4	5	6	7	8
1 Lifestyle								
2 Looking after yourself	.41							
3 Managing symptoms	.34	.49						
4 Work, volunteering & other activities	.37	.40	.35					
5 Money	.28	.41	.41	.41				
6 Where you live	.26	.36	.34	.26	.41			
7 Family and friends	.33	.35	.39	.30	.33	.42		
8 Feeling positive	.45	.38	.43	.42	.32	.29	.46	

TABLE 2: Responsiveness of the Star (N = 1245)

	First Star median	Final Star median	Z	Effect size r^2
Lifestyle	3.00	3.00	-24.99***	0.50
Looking after yourself	3.00	4.00	-17.83***	0.36
Managing symptoms	3.00	4.00	-17.04***	0.34
Work, volunteering and other activities	2.00	3.00	-22.55***	0.45
Money	3.00	3.00	-12.36***	0.25
Where you live	4.00	4.00	-8.94***	0.18
Family and friends	4.00	4.00	-11.58***	0.23

Feeling positive	3.00	4.00	-24.11***	0.48
------------------	------	------	-----------	------

***p <.001

1 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

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.

Burns, S. & MacKeith, J. (2013) The Well-being Star: Summary guidance and The Well-being Star: Quiz, Brighton: Triangle Consulting

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.

MacKeith, J., (2014). Assessing the reliability of the Outcomes Star in research and practice. *Housing, Care and Support*, 17(4), 188-197.

