

Outcomes Star™ Psychometric Factsheet: VIP Star™

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Background

The VIP Star was developed by Triangle with the Pocklington Trust and Blind Veterans UK for blind and partial sighted people. More information about the VIP Star can be found in the Organisation Guide (Burns, MacKeith & Greaves, 2017) and the overall principles behind the development of all versions of the Outcomes Star are described in MacKeith (2011).

Method and analytic strategy

VIP 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. These psychometric tests were conducted using anonymised data ($N = 538$) collected by a UK charity supporting blind ex-Service men. The average time between 1st and 2nd Star readings was 227 days.

A full explanation of the analytic strategy is provided in the accompanying document – Outcomes Star Psychometric Factsheets: Overview.

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 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 52% of the variance in the data.

Internal Consistency Internal consistency was good (Cronbach's $\alpha = .81$).

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 a large effect size for Dignity, medium effect sizes for seven areas (Health, Looking after yourself, Meaningful activity, Social life, Money and How you feel) and a small-medium effect for Where you live.

An average of 42% of the 538 service users began at 5 (the highest point on the Journey of Change), so could not move forward. These service users were excluded when testing responsiveness.

The results of these initial analyses are encouraging and suggest that the VIP Star is a valid outcomes measurement tool, with a unidimensional factor structure, internal consistency, no item redundancy and good responsiveness. Research is planned to examine inter-rater reliability and the relationship between Star readings and other measures (convergent and predictive validity).

Additional 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. Polychoric correlation matrix for outcome areas (N =538)

	1	2	3	4	5	6	7	8
1. Managing visual impairment								
2. Health	.40							
3. Where you live	.31	.37						
4. Looking after yourself	.55	.44	.36					
5. Meaningful activity	.44	.41	.22	.41				
6. Social life	.41	.37	.29	.37	.62			
7. Money	.25	.42	.27	.33	.20	.20		
8. How you feel	.49	.46	.27	.42	.52	.53	.27	
9. Dignity	.27	.39	.36	.26	.33	.33	.32	.36

Table 2. Responsiveness of the VIP Star

	First Star median	Final Star median	Z	Effect size r^1	n^2
Managing visual impairment	3.00	4.00	-14.37***	0.45	502
Health	3.00	4.00	-7.90***	0.37	229
Where you live	4.00	4.00	-5.44***	0.22	316
Looking after yourself	4.00	4.00	-8.03***	0.30	362
Meaningful activity	4.00	4.00	-9.87***	0.34	427
Social life	3.00	4.00	-9.58***	0.38	317
Money	4.00	4.00	-8.50***	0.48	159
How you feel	4.00	4.00	-8.89***	0.33	372
Dignity	4.00	5.00	-7.97***	0.51	121

*** $p < .001$

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

² An average of 42% of the 538 service users began at 5 (the highest point on the Journey of change), so could not move forward. These service users were excluded when testing responsiveness.

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. & Greaves, S. (2017) The VIP Star Organisation Guide. Brighton: Triangle Consulting

Kaiser, H.F. (1970). A second generation little jiffy. *Psychometrika*, Vol. 35, pp. 401-15.

Kaiser, H.F. (1974). An index of factorial simplicity. *Psychometrika*, Vol. 39, pp. 31-6.

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