

Outcomes Star™ Psychometric Factsheet: Independence Star™

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Background

The Independence Star is the Outcomes Star for people receiving support from armed forces organisations to improve their quality of life. It was developed by Triangle in collaboration with the Officers' Association and with input from Help for Heroes.

More information about the Independence Star can be found in the Worker Guide (MacKeith & Burns, 2017) and the overall principles behind the development of all versions of the Outcomes Star are described in MacKeith (2011).

Method and analytic strategy

Independence Star data routinely collected by a UK charity supporting the Armed Forces Community was analysed by Triangle to test the Star's validity as an outcomes measurement tool. There were 1853 first Star readings and 268 reviews. 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 62% of the variance in the data.

Internal Consistency Internal consistency was good (Cronbach's $\alpha = .74$).

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

Item redundancy: No inter-item correlation exceeded the 0.70 threshold (see Table 1). The correlation between Activities and Social life was on the threshold, perhaps because activities like volunteering, work, sports and hobbies contribute to having a good social life. Nevertheless, it is possible to have one without the other and the collaborating services supporting this population considered it important to include these as distinct outcome areas.

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 in all areas except Health, which had a small-medium effect size. When the 21% of service users beginning at 5 (who could not move forward) were excluded, the effect size for Health increased to .29, very close to the .30 threshold for a medium effect.

Conclusions

The results of these initial analyses are encouraging and suggest that the Independence Star is a valid outcomes measurement tool, with a unidimensional factor structure and good responsiveness to change.

Additional research

Research is planned to examine inter-rater reliability and the relationship between Star readings and other measures (convergent and predictive validity).

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 = 1853)

	1	2	3	4	5
1 Finances					
2 Housing	.29				
3 Health	.11	.14			
4 Activities	.28	.23	.48		
5 Social life	.35	.27	.37	.70	
6 Well-being	.41	.29	.46	.54	.61

Table 2. Responsiveness of the Independence Star (N =268)

	First Star median	Final Star median	Z	Effect size r^2
Finances	3.00	4.00	-10.11***	0.42
Housing	3.00	4.00	-9.75***	0.41
Health	3.00	4.00	-5.00***	0.21 ²
Activities	3.00	4.00	-8.32***	0.35
Social life	3.00	4.00	-8.11***	0.34
Well-being	3.00	4.00	-9.84***	0.41

*** $p < .001$

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 When service users beginning at 5 were excluded this increased to .29

References

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