

Outcomes Star™ Psychometric Factsheet: Drug & Alcohol Star™

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Background

The Drug & Alcohol Star was developed by Triangle alongside NORCAS and is designed to be used when supporting people to progress towards and maintain a life free from drug misuse and problem drinking. It was based on the Alcohol Star which Triangle created alongside Aquarius and Alcohol Concern with funding from Birmingham Drug and Alcohol Team. The collaborators 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 draft versions of the Star within their services.

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

Method and analytic strategy

Data on the acceptability and content validity of the pilot version of the Drug and Alcohol Star was gathered using questionnaires completed by 47 individuals using services provided by the collaborators at the end of the pilot period. In addition, over 170 service users took part in a pilot of the Alcohol Star.

Drug & Alcohol 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 analyses used anonymised data from 887 service users collected by a Scottish multiagency partnership providing drug and alcohol services. Most service users were under 50 years old (79%; $M = 39.72$, $SD = 11.74$), White (99%) and 65% were male.

Results

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

Acceptability and Content validity: Over 90% of workers reported that using the Alcohol Star was positive and the majority of clients had engaged with the process. Almost the same proportion of service users (86%) enjoyed completing the Alcohol Star and appreciated its simplicity and design.

Feedback from the Drug & Alcohol Star pilot supported the inclusion of all 10 outcome areas.

Does it make sense for the different outcome areas of the Star to be included in the same tool?

Factor Structure: The suitability of the data for factor analysis was confirmed, with some inter-item correlations above .30, a Kaiser-Meyer-Olkin value exceeding the recommended minimum value of 0.60 (Kaiser 1970, 1974) and a significant Bartlett's Test of Sphericity (Bartlett, 1954). This analysis yielded a unidimensional factor structure explaining 54% of the variance in scores.

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

Readings on this Star were interesting because there was a negative correlation between drug and alcohol use – greater alcohol misuse problems were often associated with less of a problem with drug misuse. This may explain the lack of relationship between alcohol use and accommodation, money and offending.

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

Item redundancy: The only inter-item correlation exceeding the 0.7 threshold was between Meaningful use of time and Community ($r = .73$), suggesting possible item redundancy between these two 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 areas of the Drug & Alcohol Star ($p < .001$), with small-medium effects for Accommodation, Money and Offending and medium effects for all other areas (see Table 2).

Conclusion

These initial psychometric analyses are encouraging and suggest that the Drug & Alcohol Star is a valid outcomes measurement tool, which measures one underlying construct, has little item redundancy and is responsiveness to change.

External research has also shown that the Drug & Alcohol Star is a useful outcomes and keywork tool, with 20 benefits identified at the organisation, programme, practitioner and client level (Harris & Andrews, 2013).

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

	1	2	3	4	5	6	7	8	9
1. Drug use									
2. Alcohol use	-.45								
3. Physical health	.16	.16							
4. Meaningful use of time	.21	.15	.51						
5. Community	.26	.14	.43	.73					
6. Emotional health	.24	.26	.40	.53	.54				
7. Accommodation	.17	.02	.32	.35	.37	.29			
8. Money	.27	.02	.40	.42	.39	.32	.50		
9. Offending	.23	.02	.16	.20	.17	.20	.31	.30	
10. Family and relationships	.14	.12	.26	.36	.36	.42	.32	.32	.27

TABLE 2: Responsiveness of the Drug & Alcohol Star (n = 695)

	First Star median	Final Star median	Z	Effect size r^1
Drug use	8	10	-12.60***	0.34
Alcohol use	7	9	-14.18***	0.38
Physical health	7	9	-11.21***	0.30
Meaningful use of time	6	8	-13.61***	0.37
Community	6	8	-13.14***	0.35
Emotional health	5	7	-17.09***	0.46
Accommodation	10	10	-6.64***	0.18
Money	9	10	-9.54***	0.26
Offending	10	10	-5.75***	0.15
Family and relationships	8	9	-11.34***	0.30

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 (2017) *The Drug & Alcohol Star: User Guide and The Drug & Alcohol Star: Organisation Guide*, Brighton: Triangle Consulting

Harris, L., & Andrews, S. (2013). *Implementing the Outcomes Star well in a multi-disciplinary environment*. RMIT University, published by The Salvation Army, Crisis Services Network, Victoria, Australia

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.