

Psychometric Properties of the German Version of Hospital SOPS for Leaders (Medical Directors)

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Track Number: SOPS T5 – S1

Safety culture in Germany

- Estimated death rate among hospital patients in Germany: 0.1%
 - 17,000 deaths a year (Hoffmann and Rohe 2010; Conen et al. 2006)
 - Publishing the report: “Aus Fehlern lernen“ (Learning from errors)
- The importance of improving safety culture has grown, however, there is still a lack of knowledge on safety culture and patient safety

Why using the Hospital-SOPS?

- Analyses of psychometric properties
 - Reliability: $\alpha = .63 - .84$
 - Construct validity
 - Exploratory and confirmatory factor analysis

- Includes 3 patient safety outcomes
 - Frequency of event reporting (3-item scale);
 - Number of events reported (1 item);
 - Patient safety grade (1 item)

- Already used in 31 countries
 - Swiss-German-version (Pfeiffer, Y. and Manser, T. submitted)

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Purpose

- Test, whether the Hospital SOPS for Leaders could be used in a medical directors' survey
 - Test, whether the Hospital SOPS for Leaders shows the same psychometric properties as the original HSOPS for hospital employees
- Adapting the Swiss-German-version (Pfeiffer, Y. and Manser, T. submitted)
- For typical linguistic usage in Germany
 - For medical directors in German hospitals

Response

- Data collection between April and October 2008
- Cross-sectional, retrospective postal-mail survey
- 1224 medical directors from German hospitals
 - Inclusion criterion: one internal medicine and one surgery unit
- Response rate of about 45% (n=551)
- 4 respondents were excluded (missing values >30% in scale items)

Statistical analysis

- Replacing missing values by a multiple imputation
- Confirmatory factor analysis (CFA)
- Reliabilities
- Inter-correlation of the dimensions
- Comparison composite scores (USA vs. GER)

Results – Confirmatory factor analysis (CFA)

Model Fit index	Criterion ($n > 250$ and $m \geq 30$) ^a	Fit index German sample
CMIN/df	<3.0	2.177
CFI (Comparative-Fit-Index)	>0.90	.916
TLI (Tucker-Lewis-Index)	>0.90	.903
RMSEA (Root-Mean-Square-Error of Approximation)	≤ 0.07	.046
SRMR (Standardized-Root-Mean-Residual)	<0.08	.048

^a Hair et al. 2006

Results – Reliability

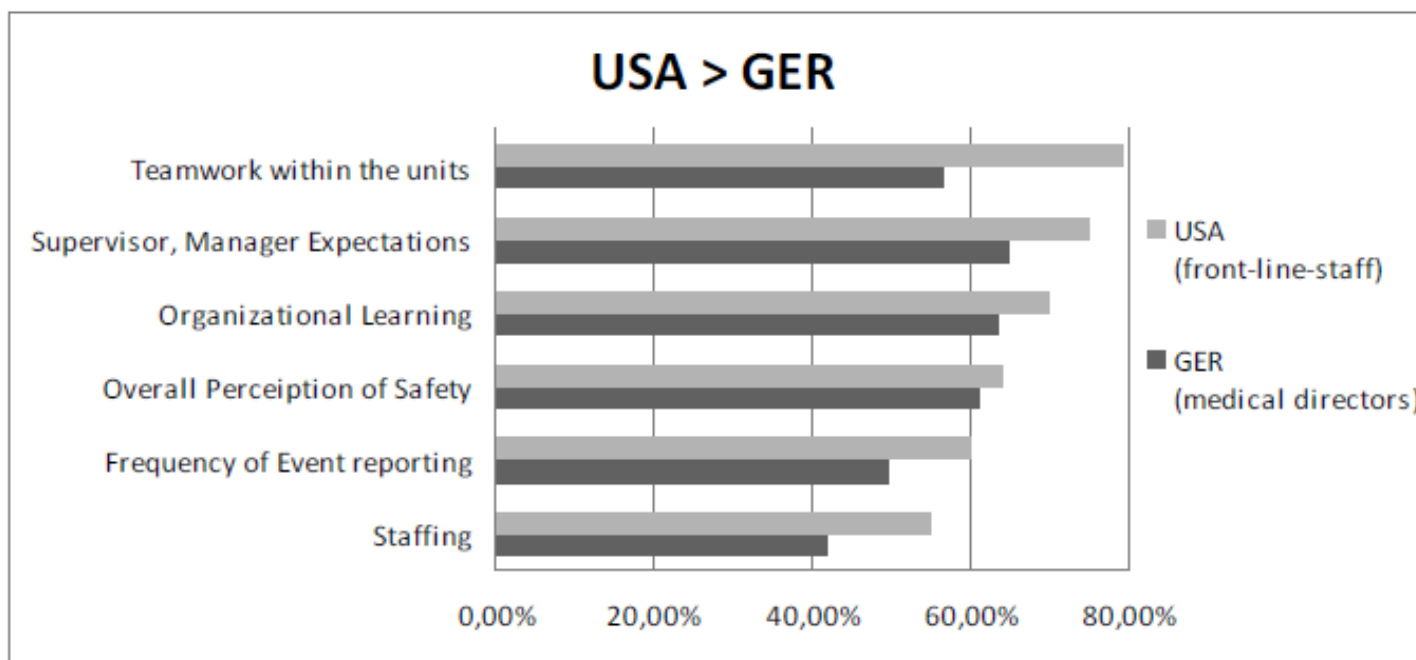
Factor	No of items	Cronbach's Alpha American data ^a	Cronbach's Alpha Swiss data ^b	Cronbach's Alpha German data
Safety Culture Dimensions				
1 Hospital management support for patient safety	3	.83	.83	.86
2 Supervisor/manager expectations/actions	4	.75	.79	.69
3 Teamwork across hospital units	4	.80	.77	.78
4 Teamwork within units	4	.83	.75	.77
5 Communication openness	3	.72	.64	.63
6 Hospital handoffs and transitions	4	.80	.72	.83
7 Nonpunitive response to error	4	.79	.70	.73
8 Feedback and communication about error	3	.78	.78	.79
9 Staffing	4	.63	.65	.73
10 Organizational learning	3	.76	.68	.62
Outcome dimensions				
11 Overall perceptions of safety	4	.74	.76	.73
12 Frequency of event reporting	3	.84	.70	.86

^a (Sorra, J. S. and Nieva, V. (2004); ^b (Pfeiffer, Y. and Manser, T. (submitted))

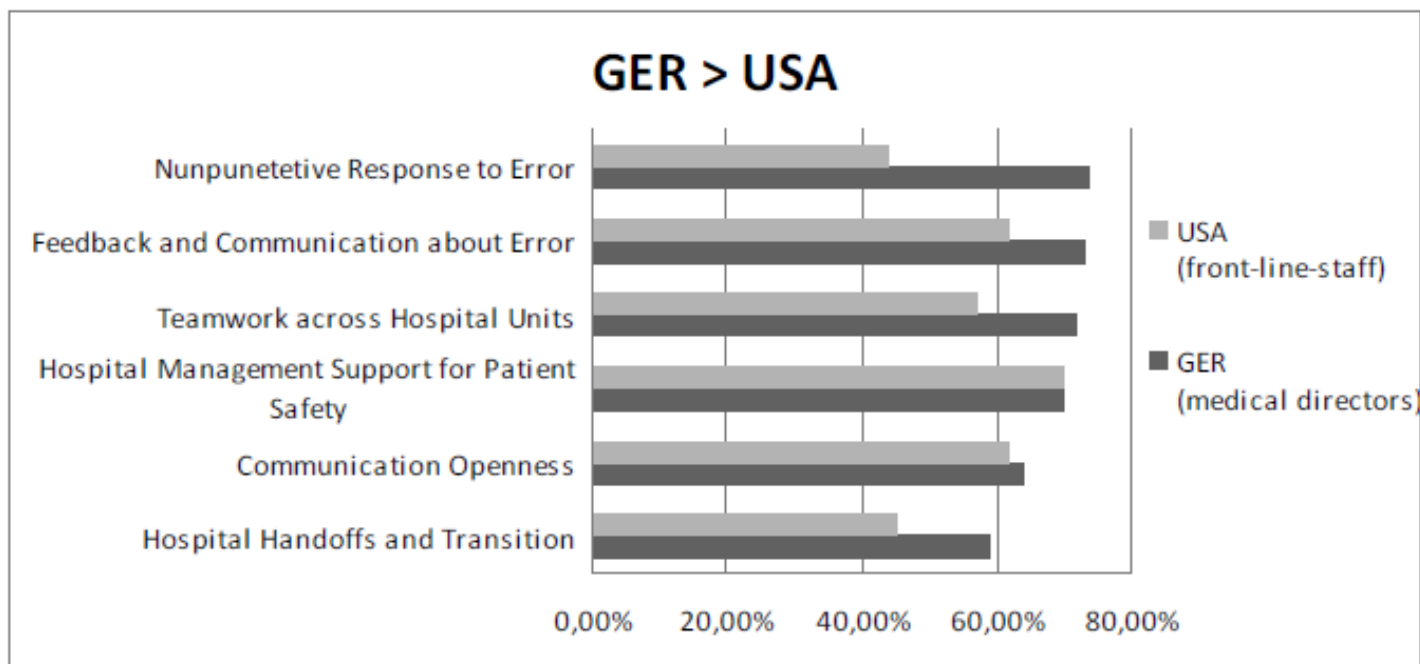
Results – Inter-correlation of the dimensions

Factor	1	2	3	4	5	6	7	8	9	10	11
1 Hospital management support for patient safety											
2 Supervisor/manager expectations/actions	.54										
3 Teamwork across hospital units	.60	.43									
4 Teamwork within units	.58	.62	.48								
5 Communication openness	.47	.46	.48	.58							
6 Hospital handoffs and transitions	.50	.49	.47	.52	.47						
7 Nonpunitive response to error	.45	.42	.27	.33	.35	.38					
8 Feedback and communication about error	.60	.48	.54	.56	.49	.54	.38				
9 Staffing	.47	.39	.62	.46	.43	.47	.22	.52			
10 Organizational learning	.59	.41	.59	.49	.56	.43	.23	.53	.49		
11 Overall perceptions of safety	.64	.57	.53	.54	.48	.59	.48	.60	.46	.56	
12 Frequency of event reporting	.41	.32	.48	.31	.30	.31	.13	.39	.46	.44	.40

Comparing composite-level results I



Comparing composite-level results II



Limitations

- Level of respondents (staff vs. medical director)
- Key-informant- persons
- Selection bias (sampling)
- Response bias
- Inhouse-Survey (who answered the Questionnaire)

Conclusion

- CFA indicates that the factor structure of the original HSOPS fits to the German-data
 - Dimensions have an acceptable level of reliability
 - Discriminant construct validity proves that the HSOPS is eligible for measuring safety culture in German hospitals from the medical directors' point of view
- Valid measurement to proof intervention for improving safety performance

Thank you very much!

Results will be published soon.

For any further information please contact.

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