Preliminary psychometric properties of the Inferiority Complex Scale (COMPIN-10) in Bosnian-Herzegovinian, Serbian, Indian and Malaysian culture

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INTRODUCTION

Short Inferiority Complex Scale (COMPIN-10) assess person's general feelings of inferiority conceptualized in the Adler's personality theory. The COMPIN-10 scale consists of 10 items which describe permanent feeling of inferiority, passivity, regression, lack of courage, fatalistic reaction and personal sense of lack of happiness. As well as the 40-items version of the Inferiority Complex Scale (Mitrović, 1998), the COMPIN-10 scale shows good psychometric characteristics and a single factor structure (Čekrlija, Đurić & Mirković, 2016). Inferiority complex measure was found positively correlated with all facets of Neuroticism from the Alternative Five Factor Model of personality (Čekrlija et al. 2017). Obtained results of the studies sounded like opportunity to estimate the inferiority complex using psychometrically and theoretically well-founded short scale. Interest for the COMPIN-10 scale encouraged the idea to translate and validate the COMPIN-10 scale into other languages. In the first study English translation of the COMPIN-10 was used in Indian and Malaysian culture among bilingual population, while B-C-S and Serbian version of the COMPIN-10 were administrated in the BiH and Serbia. The aim of the conducted study was to consider preliminary psychometric properties of the short scale of inferiority complex (COMPIN-10) in Bosnian-Herzegovinian, Serbian, Indian and Malaysian culture.

METHOD

Sample and procedure
The whole sample were "variegated" according to number of respondents per culture and gender groups. It is accepted only for the preliminary study for the following validation of the scale. Total sample includes 733 participants (BiH=193 (124 female), Serbia=234 (192 female), India=100 (all female), Malaysia=206 (108 female)) between 18 and 23 years old (M=20.66, SD='2.23). All data were collected using online version of the questionnaire.

Measures
COMPIN-10 (Čekrlija, Đurić & Mirković, 2017) is a short version of the Inferiority Complex Scale that comprises 10 items to be rated on on a 5-point Likerts scale.

Statistic analysis
Descriptive parameters for overall score and for all items were calculated (M, SD, S, K, Min, Max, α). Exploratory factor analysis were performed separately for each culture.

RESULTS

Results in the table 1 indicate satisfactory reliability coefficient for all countries ranging from .82 to .90, while no significant values of skew indexes were registered. Correlation between sum score and the first Hoteling principal component of the scale was very high, as well as the average correlation between COMPIN-10 items. Results show that respondents in Malaysia and India score significantly higher infeeoriority complex (F(3,729)=54.02, p<.001) than respondents in Bosnia and Herzegovina and Serbia. While Indian sample included only female respondents, in BiH no significant gender difference was found. Results in Malaysia showed significantly higher inferiority complex score at male respondents (d=22), while women in Serbia scored significantly higher than men (d=.34). No significant relationship eith age was not found at any sample.
Results in the table 2 shows more or less acceptable item measures in all four tested samples. The most significant skewness and kurtosis values were registered in Serbian sample. Corrected item-total correlation values are lower in Indian sample than in other countries.
Exploratory factor analysis with principal components method of extraction and scree test clearly showed unidimensional structure of the COMPIN-10 scale in all countries. KMO coefficients were acceptable to proceed with the analysis and Bartlett's test of sphericity indicated that it was appropriate to use the factor analysis (table 3). Explained variance was above 50% except in Indian data set (42%). Factor loadings in the table 2 (λ) show robust general dimension of inferiority complex in all countries.

DISCUSION & CONCLUSION

Obtained results indicate robust structure and satisfactory reliability of the short inferiority complex scale. Overall findings suggest that scale COMPIN-10 can be adequate research tool in assessment of inferiority complex in different languages. Identified differences between cultures are interesting but it can not be explained yet. Collected samples were adequate just for the preliminary examination. However, the obtained results are encouraging and and represent an argument in favor of adapting the COMPIN-10 scale to other languages. Developed english version of the scale
In following studies findingsobtained within post-hoc tests should be considered. Nonetheless, other self-concept measures, composite if possible should be involved.

Table 1. COMPIN-10 score descriptive parameters

	BiH	India	Malaysia	Serbia
M	22.60	27.23	29.78	2.24
SD	8.56	8.05	8.42	8.39
S	.71	.18	-.18	.68
K	-.09	-.44	-.66	-.54
Min	10	11	10	10
Max	..47	48	50	44
α	.90	.82	.90	.89
M $r_{i\text{-}tot}$	.48	.31	.46	.45
r (sum score - PC)	1.00	.99	.99	.99
Cohen d (gender)	.02		.22	.34
r (age)	.00	.00	.-.12	-.05
F (country)	F(3,729)=54.02, p<.001			

Note: M-mean; SD-standard deviation; S-skewnis, K-kurtosis α-Cronbach reliability coefficient; M-average inter-item correlation; PC-principal component

Table. 2 Items descriptive parameters and factor loadings

		M	SD	S	K	$r_{i\text{-}t}$	$α_{ld}$	λ
BiH	IC1	2.37	1.13	.53	-.54	.68	.89	.75
	IC2	2.33	1.26	.68	-.65	.72	.89	.79
	IC3	2.36	1.13	.63	-.41	.62	.90	.70
	IC4	2.39	1.18	.52	-.65	.53	.90	.61
	IC5	2.01	1.05	.95	.27	.58	.90	.66
	IC6	2.08	1.14	.87	-.16	.66	.89	.74
	IC7	2.05	1.05	.81	.04	.63	.90	.71
	IC8	2.36	1.12	.66	-.35	.68	.89	.76
	IC9	2.30	1.29	.68	-.74	.70	.89	.77
	IC10	2.35	1.34	.61	-.94	.76	.89	.82
India	IC1	3.06	1.14	-.20	-1.05	.16	.84	.53
	IC2	2.44	1.24	.33	-1.24	.64	.79	.74
	IC3	3.60	1.32	-.73	-.71	.43	.81	.55
	IC4	2.50	1.32	.51	-.93	.73	.78	.82
	IC5	2.48	1.32	.45	-1.07	.68	.79	.79
	IC6	3.30	1.20	-.46	-.88	.49	.81	.60
	IC7	3.05	1.43	.04	-1.48	.37	.82	.46
	IC8	2.27	1.32	.98	-.13	.53	.80	.67
	IC9	2.21	1.22	.86	-.28	.46	.81	.58
	IC10	2.32	1.46	.69	-.95	.57	.80	.70
Malaysia	IC1	3.17	.97	-.15	-.32	.56	.89	.64
	IC2	3.23	1.14	-.27	-.73	.60	.89	.68
	IC3	2.97	1.12	-.06	-.70	.62	.89	.70
	IC4	3.06	1.16	-.17	-.95	.61	.89	.69
	IC5	2.51	1.22	.26	-1.04	.58	.89	.67
	IC6	2.89	1.21	-.04	-.96	.78	.88	.84
	IC7	2.88	1.20	.05	-.89	.75	.88	.82
	IC8	2.99	1.13	-.08	-.83	.71	.88	.78
	IC9	2.84	1.33	.05	-1.21	.63	.89	.71
	IC10	3.24	1.22	-.30	-.86	.58	.89	.66
Serbia	IC1	2.33	1.12	.42	-.66	.65	.88	.73
	IC2	2.33	1.30	.58	-.88	.63	.88	.70
	IC3	1.64	.99	1.72	2.57	.41	.89	.49
	IC4	1.79	1.14	1.35	.74	.40	.90	.47
	IC5	1.44	.86	2.03	3.49	.59	.88	.67
	IC6	2.16	1.22	.69	-.74	.79	.87	.86
	IC7	2.13	1.26	.83	-.48	.67	.88	.75
	IC8	2.14	1.34	.83	-.62	.67	.88	.75
	IC9	2.16	1.26	.77	-.57	.70	.88	.78
	IC10	2.12	1.23	.79	-.53	.80	.87	.87

Note: M-mean; SD-standard deviation; S-skewnis, K-kurtosis, α-reliability if item deleted; $r_{i\text{-}t}$ corrected item-total correlation; λ- factor loading

Table 3. Sampling adequacy and Bartlett's test of sphericity

	BiH	India	Malaysia	Serbia
KMO	0.898	0.776	0.899	0.905
$χ^2$	963.403	344.191	1003.362	1159.30
df	45	45	45	45
p	.000	.000	.000	.000
variance	53%	40%	52%	51%

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