SFERA Test: preliminary validation with an athletes' sample

Dolce Valentina[1], Borla Cart Valentina[2], Vercelli Giuseppe[2],Cortese Claudio G.[3]

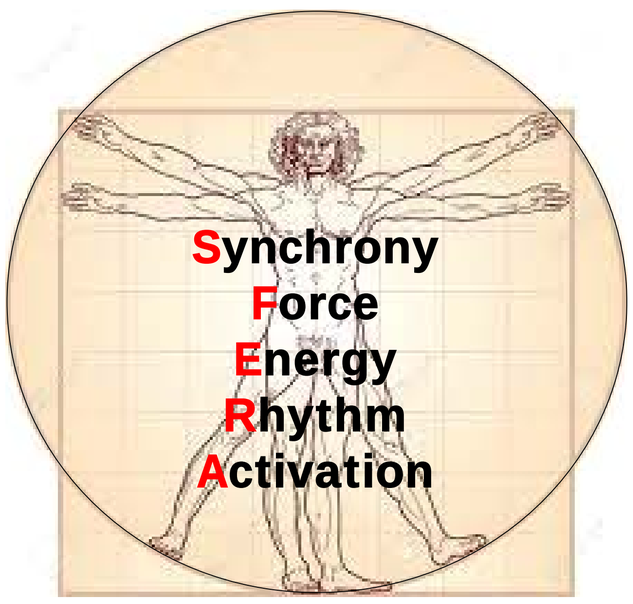
[1] University of Turin (Psychology Department) and Université de Haute-Alsace (LISEC)
[2] ISEF - Centro di Psicologia dello sport e della prestazione umana di Torino
[3] University of Turin (Psychology Department)

Dipartimento di Psicologia Università di Torino

ISEF Centro di Psicologia dello sport e della prestazione umana

INTRODUCTION

Scholars and consultants in the field of sport psychology are becoming increasingly interested in the role played by psychological skills for athletes' performance.
SFERA (Vercelli, 2005) model is a specific tool used for the optimisation of mental performance and it consists of five dimensions:



It is a reference for CONI (Italian National Olympic Committee) and Juventus Football Club (Turin), and it was developed by qualitative research.
This study aimed to provide a first validation of SFERA Test, defined by 5 subscales: Synchrony, Force, Energy, Rhythm, Activation.

METHOD

A sample of 159 athletes has completed a self-report questionnaire. Respondents were asked to think about training moments and to indicate their agreement by means of a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).
Data were analysed with SPSS 25 and Mplus7 to test the factorial validity of scale through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA).
The reliability was calculated by examining the internal consistencies of each subscales.

Athletes' descriptive data (159)	
Age	
18-25	62%
26-35	25%
> 35	4%
Sport	
Basketball	75%
Football	12%
Volleyball	9%
Other	6%
Age of beginning	
< 6	18%
6-10	51%
11-16	30%
> 16	1%

RESULTS

Results: EFA (total variance: 66.41%) and CFA [$\chi 2(240)=358.189$; $p < .001$; RMSEA=.06 (.04, .07); CFI=.94 TLI=.93 SRMR=.06] have shown a 5-factor structure: synchrony (4 item, $\alpha = .83$), force (6 item, $\alpha = .90$), energy (3 item, $\alpha = .70$), rhythm (5 item, $\alpha = .81$), activation (6 item, $\alpha = .88$).

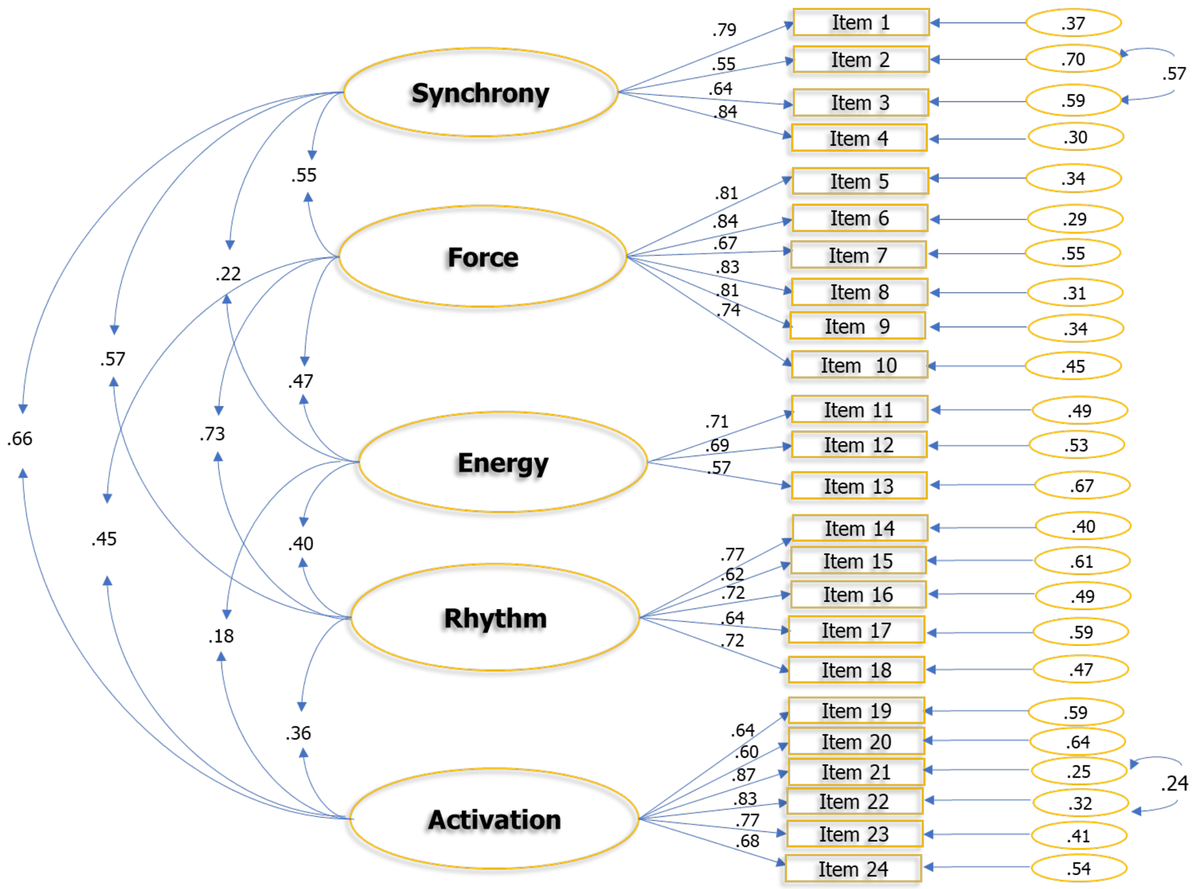


Figure 1. CFA (Model 1, 5 factors, 24 items; N = 159): standardized solution

Table 2. Results of CFA analysis, Goodness of Fit Statistics

	χ	*df*	*p*	*CFI*	*TLI*	*RMSEA*	*SRMR*	*Comparison*	*Δχ2*	*p*
M_1	358.189	240	001	.94	.93	.06(.04,.07)	.06			
M_2	1031.556	253	001	.58	.54	.14(.13,.15)	.122	M2-M1	673.367	.001

M1, 4-factor model; M2, 1-factor model
Legend. CFI = Comparative Fit Index; TLI = Tucker Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

Table 3. Measures

Factor	Item	Definition
Synchrony	«My thoughts was completely focused on action»	The ability to focus on action and on present, using concentration and union body-mind
Force	«I was confidence in my abilities»	It concerns the awareness and confidence in cognitive, physical and psychological abilities useful to reach the objectives and optimize performance
Energy	«I knew how much physical energy I had been using»	The ability to monitor and control the physical and psychological personal resources
Rhythm	«I proceeded without hesitation»	It concerns the quality of action. It is related to athletes' action. In a team, it may help to maintain cohesion.
Activation	«I would have gone on for hours»	It concerns the motivation for practice the sport, the passion and the feeling of satisfaction, joy and pleasure in doing activities.

DISCUSSION

The purpose of this paper was to validate the version of an instrument designated for the optimisation of mental performance. These preliminary findings confirmed the 5-factor structure of the SFERA Scale.
Limitations: The sample is not representative, this is only the first validation of tool, with further administration of questionnaire will carry out additional test. Furthermore, the further study should test the concurrent validity, considering other variables such as general self-efficacy and flow at work.
Practical implications: This tool could be easily used for coaching and training to monitor the level of psychological skills over time or before and after a specific mental training.

MAIN REFERENCES

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