

The factor structure of the Brief COPE: An investigation testing different models among sport students

Fabian Pels, Alina Schäfer, & Birte von Haaren-Mack

German Sport University Cologne

Introduction

Many university students suffer from stress (e.g., Herbst et al., 2016). This requires appropriate instruments for professionals to measure coping for both research and practical application. The Brief COPE (Carver, 1997) is an internationally well-established instrument to assess coping in different contexts. However, studies differ in the factor structure of the Brief COPE they use. Therefore, the aim of the present study was to compare three different factor models of the Brief COPE in order to find the most appropriate one to assess coping in students (a) during and (b) outside university lessons: (1) the original Brief COPE factor structure with 14 first-level factors, (2) a hierarchical factor structure with 14 first-level factors and three second-level factors, and (3) a hierarchical factor structure comprising eleven first-level factors and four second-level factors.



Methods

The sample comprised 508 university students of sport sciences and physical education (40.2% f, 59.8% m) ranging from 18 to 41 years of age ($M = 21.09$, $SD = 2.72$). 84.6% of them were studying in a Bachelor program. Most of the students (82.9%) were in the first term of their respective study program ($M = 1.54$, $SD = 1.61$).

Coping was assessed using the situational version of the German-language translation of the original Brief COPE. It comprises 28 items similar to the original items (e.g., "I've been blaming myself for things that happened") asking the participants to indicate their use of different coping strategies during and outside university lessons with a response format ranging from 1 (*I haven't been doing this at all*) to 4 (*I've been doing this a lot*).

The three different factor models were tested using confirmatory factor analysis in IBM SPSS Amos 25. Model values were compared with the use of χ^2 -comparisons.

Results and Discussion

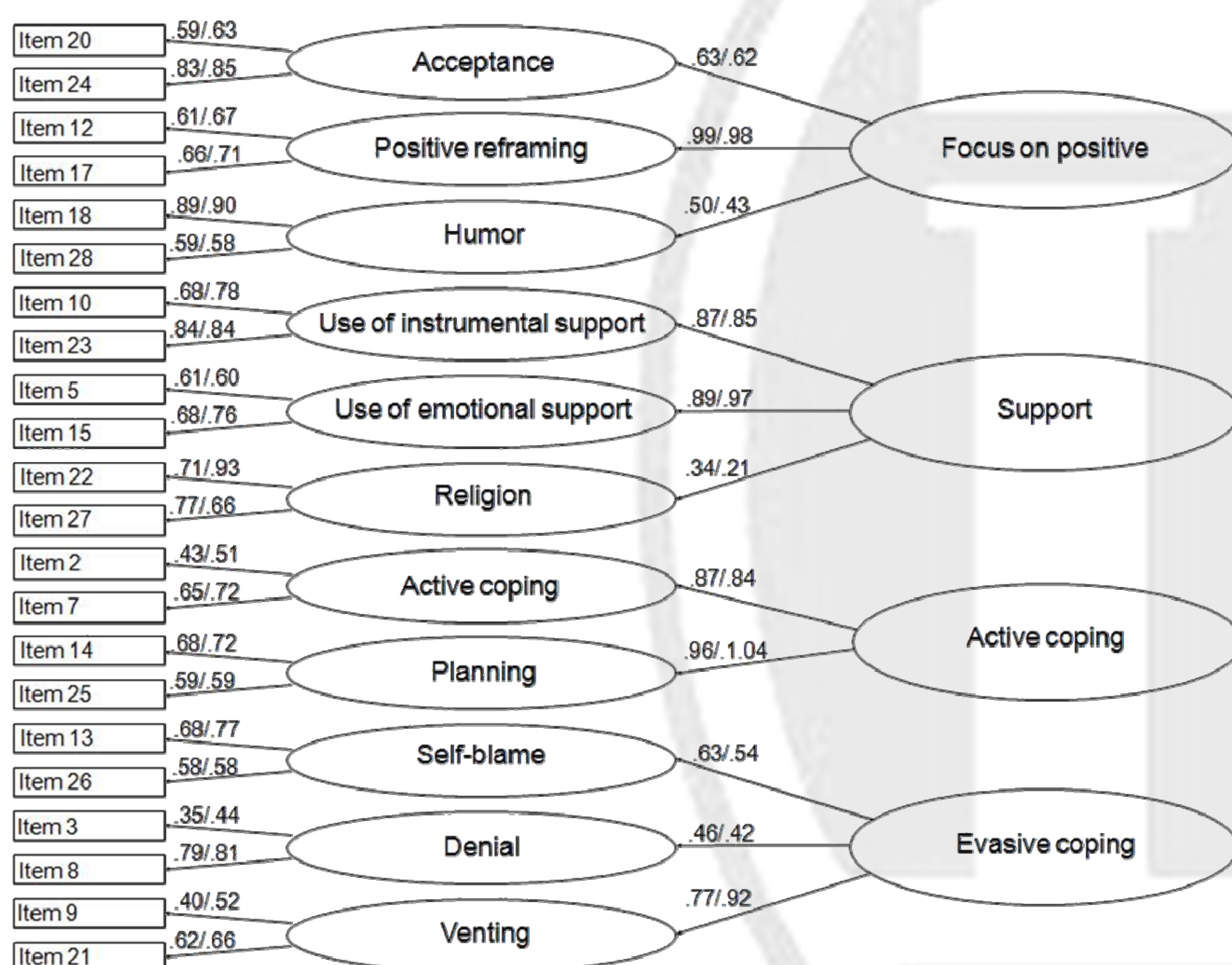


Fig. 1: Factor loadings of the final factor structure (left: during lessons/right: outside lessons)

Results show that a two-level factor structure (see Fig. 1) fits best (during lessons: $\chi^2(192) = 371.75$, $p < .001$, $TLI = .89$, $CFI = .91$, $RMSEA = .05$, $SRMR = .05$; outside lessons: $\chi^2(192) = 382.83$, $p < .001$, $TLI = .91$, $CFI = .92$, $RMSEA = .05$, $SRMR = .05$). The dominance of this model was underpinned by χ^2 -difference tests showing significant differences to the other models.

This finding is in line with Schwarzer and Schwarzer (1996) who suggest a multilevel conceptualization of coping strategies with rather stable dimensions at higher levels and a variety of specific strategies and acts at lower levels. A consideration of specific strategies at lower levels helps practical application (e.g., differential diagnosis during coaching of students), whereas general, higher-level dimensions can be better used for research (e.g., due to higher internal consistency). For example, the Brief COPE can be used to examine the impact of different coping dimensions on perceived stress (Schäfer et al., 2017). However, there are limitations to the generalizability of the study. Therefore, future studies should, for instance, validate the factor structure with an observer form coping inventory (e.g., Han et al., 2009).

References

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