Factorial Validity and Group Invariance of the Portuguese Short Version of the Social Physique Anxiety Scale in Adolescents

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1. INTRODUCTION

- Social Physique Anxiety (SPA) is a subtype of social anxiety that occurs as a result of the prospect or presence of interpersonal evaluation involving one’s physique (Hart et al., 1989, p.56). It represents an emotional reaction to perceived or received assessment of one’s body and is construed by appraisals of social interactions (Subotnik et al., 2007).

- SPA has been associated with health-related behaviors (e.g., exercise, dietary habits, smoking) and psychosocial functioning (e.g., self-esteem, body satisfaction; Davidson & McCabe, 2000).

- Particularly important in early adolescents due to greater risk of body-related concerns resulting from heightened self-consciousness, concerns about peer evaluation and social conformity (Paxton et al., 2006).

- Purpose: To examine the factorial validity and group invariance of the short form of the Social Physique Anxiety Scale (SPA), Meil and Century (1999) for Portuguese adolescents.

- To determine construct and concurrent validity of the new Portuguese version.

2. METHODS

Participants
- Nationally representative sample of 3730 8th- and 10th-grade students (mean = 15.07 ± 1.34 years, male = 12, mean = 20th). Girls: 53%, boys: 47%.

Variables
- Satisfaction with weight (SW)
- “Are you very satisfied with the size and shape you have now?” (1 = no, 2 = somewhat, 3 = yes, 4 = yes, but I would lose some weight, 5 = yes, because I need to put on weight, 6 = yes).

- Physical activity (PA)
- “On how many days, during the last seven days, were you physically active at least 60 minutes?” (0 = zero days, 7 = seven days).

- Body Mass Index (BMI)
- “How do you think about your body?” (1 = much too thin; 2 = thin; 3 = normal; 4 = fat; 5 = much too fat).

- Social physique anxiety (SPA)
- Self-reported weight and height (Kg/m2), normal, overweight and obese (Cole, Bellizzi, Flegal, & Dietz, 2000).

Procedures
- Health behaviour in School-aged Children (HBSC) 2006 survey. Schools and pupils selected by stratified random procedure, representing the five national educational regions.

Surveys administered by teachers: participation was voluntary and anonymity was assured. 87% return rate.

Data Analysis Procedures
- Exploratory factor analysis (N = 1000) followed by confirmatory factor analysis (N = 2300).

- Confi gurational invariance and metric invariance:
  - gender – male (n = 1509) vs. females (n = 1724).
  - grade – 8th-grade (n = 1709) vs. 10th grade (n = 1837).
  - SW: adolescents who are not on a diet (n = 1578) vs. adolescents who are or believe they should be on a diet (n = 436).
  - PA: adolescents who do not achieve WHO recommendations (n = 1594) vs. adolescents who achieve recommendations (n = 486).
  - BMI: normal (n = 1514) vs. overweight (n = 1149).
  - FPQ: normal (n = 2286) vs. overweight or obese (n = 493).

- Onset p. ANCOVA with Schaal post-hoc for construct and concurrent validity.

3. RESULTS

3.1 Exploratory Factor Analysis

- Final solution (Principal Component Analysis): 6 items (see Table 1). Eigenvalues > 1.0, 65.3% of the variance, ω = .87.

- All factor loadings > .94, except item 1 (I am comfortable with how fit my body appears to others). TLI = .97, NFI = .962, RMSEA = .081 (90% CI: .069 - .093), SRMR = .039.

3.2 Confirmatory Factor Analysis

- 6-item model showed appropriate fit to the data (Figure 1).

- Model results: χ2 (p = .001) = 278.12, CFI = .97, TLI = .97, NFI = .962, RMSEA = .081 (% CI: .069 - .093), SRMR = .039.

4. DISCUSSION AND CONCLUSION

- The exploratory and confirmatory analysis were consistent with the original unidimensional model (Moll & Connolly, 2001), but the final solution was composed of 6 items. This different structure is likely to represent cultural differences (Bagge et al., 2007; Lindwall, 2004).

- EMSA was lower than .05 (ISD) and the upper limit of 90% confidence interval was lower than .05 which shows “a good degree of precision” (Byrne, 2001, p. 82).

- The current 6-item structure appears to be invariant across a number of group. Even though p > .05 was significant while comparing unconstrained and constrained models, which can be attributed to a large sample (Schumacker & Lomax, 1996), the Comparative Fit Index (CFI) for both models were very high (above .99) in all groups and changes were lesser than .01 (Cheung & Rensvold, 2000).

- Consistent with previous research (e.g., Hart, et al., 1989; Moll & Connolly, 2001), females, adolescents who are less active, those who are dieting or think they should lose weight, and those who think their body is much too fat scored significantly higher in SPA than their counterparts. However, no differences were found according to BMI. Self-perception may be more important than actual measurement of BMI developing SPA.

- The current 6-item Portuguese short version of the Social Physique Anxiety Scale can be used by researchers in analysing and interpreting scores of SPA across a variety of samples in Portuguese adolescents; this instrument can be used in cross-cultural research.

5. REFERENCES


- Byrne, B.M. Structural Equation modelling with Amos: basic concepts, applications, and programming. Mahwah, New Jersey: Lawrence Erlbaum Associates.