

# Aspects of validity in stress research

Measurement properties and the application of self-reported stress questionnaires

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**Emina Hadžibajramović**

Fakultetsopponent:  
Professor Emeritus Svend Kreiner  
Department of Biostatistics  
University of Copenhagen

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- I. Hadžibajramović E., Svensson E., Ahlborg G. Jr, Construction of a global score from multi-item questionnaires in epidemiological studies. Working paper series 4/2013, Örebro University, 2013.
- II. Hadžibajramović E., Ahlborg G. Jr, Grimby-Ekman A., Lundgren-Nilsson Å., Internal Construct Validity of the Stress-Energy Questionnaire in a working population, a cohort study. BMC Public Health, 2015, 15:180
- III. Hadžibajramović E., Ahlborg G. Jr., Håkansson C., Lundgren-Nilsson Å., Grimby-Ekman A., Affective stress responses during leisure time – validity evaluation of a modified version of the Stress-Energy Questionnaire, Scan J Public Health 2015 doi: 10.1177/1403494815601552, Epub ahead of print September 2015. Sage Publications.
- IV. Hadžibajramović E., Ahlborg G. Jr, Grimby-Ekman A., A longitudinal study of the impact of psychosocial job stressors on symptoms of burnout, synchronous and delayed effects. *Manuscript*



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# Aspects of validity in stress research

## Measurement properties and the application of self-reported stress questionnaires

**Emina Hadžibajramović**

Health Metrics, Department of Public Health and Community Medicine  
Institute of Medicine  
Sahlgrenska Academy, University of Gothenburg  
Gothenburg, Sweden

### ABSTRACT

**Aim:** To increase knowledge about validity evaluation and interpretability of a multi-item self-report questionnaire used in occupational health and stress research, and to investigate longitudinal associations between the psychosocial work environment and symptoms of burnout.

**Method:** The data come from a four-wave cohort study of public health care workers from the Region Västra Götaland. Rasch analysis was used for evaluation of measurement properties. A criterion based approach (CBA) was developed, and along with the median proposed for global scores in the Stress-Energy Questionnaire (SEQ). The CBA was applied for the SEQ-Leisure Time (SEQ-LT) and for the measurements of demands, decision authority, effort and reward. Longitudinal associations were analysed using mixed-effects regression models with random intercept.

**Results:** Good psychometric properties were found for the SEQ and SEQ-LT. The CBA was recommended for the SEQ. The CBA was applied to the SEQ and SEQ-LT, demands, decision authority, effort and reward. Investigated workplace factors were associated with increased symptoms of burnout.

**Conclusion:** The SEQ and SEQ-LT provide valid and useful tools for assessing work-related and non-work related affective stress responses respectively. Rasch analysis is proposed for the evaluation of measurement properties. Increased awareness of the construction of global scores is needed. The CBA can be used for identification of the risk groups for adverse health effects, as defined by the theoretical foundations of the questionnaires, provided good measurement properties defined by the Rasch model. Longitudinal associations were found between demands, decision authority, effort and reward) and the symptoms of burnout.

**Keywords:** Affective stress response, Validity, Rasch analysis, Global scores

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