

# Subjective Health Complaints in Adolescence - Validity of the HBSC Symptom Checklist in Luxembourg

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## INTRODUCTION

The *Health Behavior in School-aged Children* survey is an international research collaboration that aims to examine **health** and **well-being**, as well as **health behavior**, of school-age children and adolescents.

**Subjective health complaints** is the term used to describe a variety of health symptoms experienced by the individual, which may range from occasional health complaints to clinical manifestations, and may impair everyday functioning.

The **HBSC Symptom Checklist (HBSC-SCL)** consists of an eight-item scale developed for the HBSC survey to **measure adolescent subjective health complaints**. Although it was developed based on a RASCH measurement analysis which proved that the items are indicators of a unidimensional latent trait, some studies suggest two highly correlated dimensions.

## OBJECTIVE

*The objective of this study is to test the validity of the Luxembourgish version of the Health Behaviour in School-aged Children - Symptom Checklist.*

## METHODS

### Participants

The **2014 HBSC Luxembourg survey** took place during the 2013/14 school year. A total of 590 classes following the national curriculum were randomly selected and **7 757 students** aged from 11 to 18 years old responded to the questionnaire translated to both French and German distributed by their teachers.

### Questionnaire

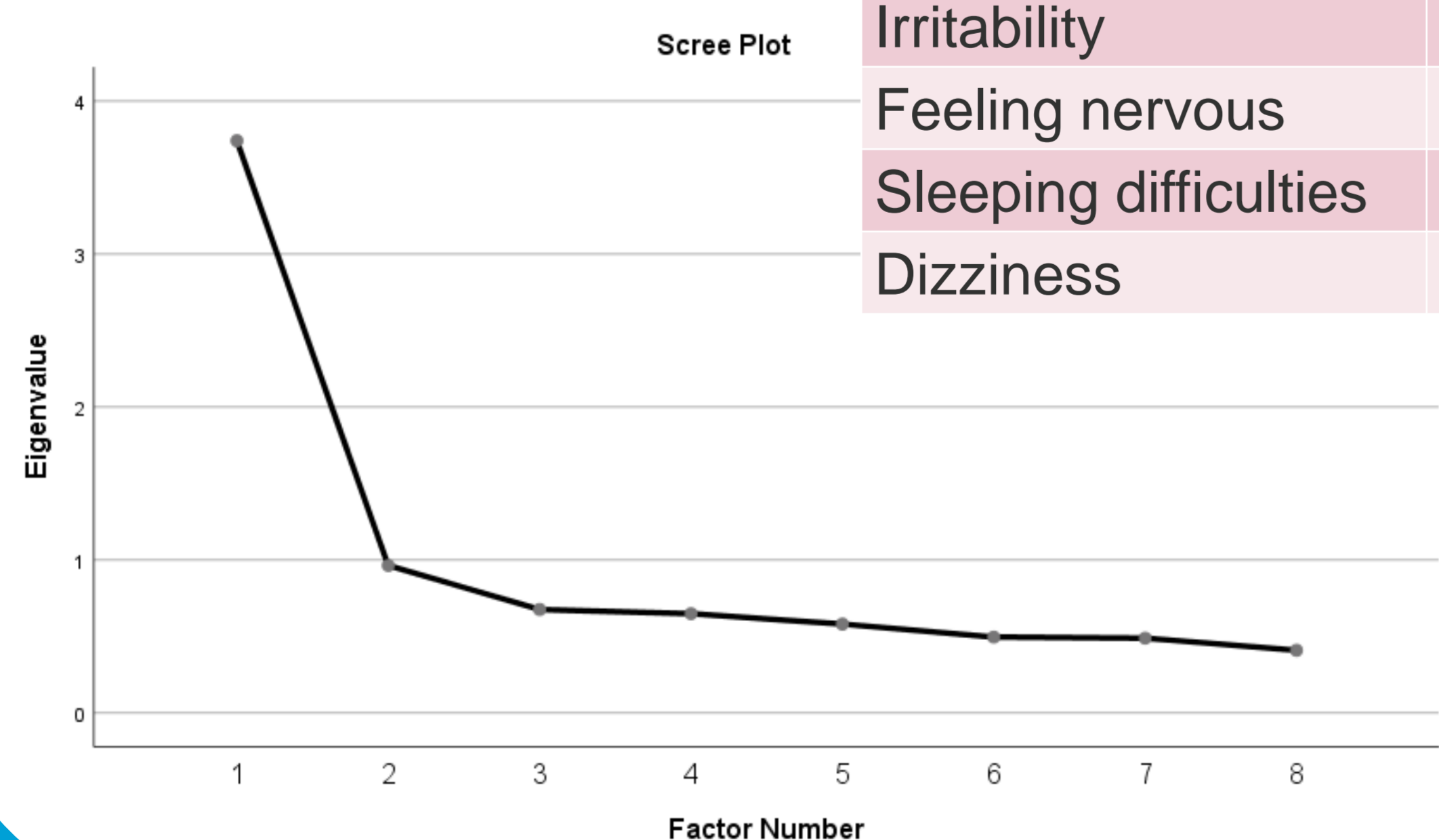
The **HBSC-SCL** is a non-clinical measure of subjective health complaints developed by the HBSC survey. The participants were asked how often they had the following **eight health complaints**: headache, abdominal pain, backache, feeling low, irritability or bad mood, feeling nervous, sleeping difficulties and dizziness. Each item was rated on a 5 point Likert-scale ranging from "About every day" to "Rarely or never".

## RESULTS

Reliability Statistics		KMO and Barlett's Test	
Cronbach's Alpha	.84	KMO	.88
N of Items	8	Barlett	18119.38***

Eigenvalues	Factor 1
Total	3.74
% of Variance	46.75%

	Factor 1
Headache	.62
Abdominal pain	.59
Backache	.51
Feeling low	.67
Irritability	.69
Feeling nervous	.70
Sleeping difficulties	.60
Dizziness	.61



## DISCUSSION

First, Cronbach's alpha showed the questionnaire to reach acceptable reliability,  $\alpha=.84$ . Further, the Kaiser-Meyer-Olkin criterion and the Bartlett sphericity test indicated the use of a factor analysis (KMO=.88;  $p<.001$ ). A Principal Component Analysis with Varimax Rotation (with the Eigenvalues over 1) and a scree plot test suggests a one factor matrix with a total variance explained of 47%.

Factor analysis support the existence of a **single factor for the Luxemburgish population in accordance with the preliminary model developed**.

Literature have mixed results, with the possibility to compute one or two health complaints scores. More studies should confirm these findings but as the **HBSC-SCL** internal consistency possibly depends on the country studied, it is recommended to be systematically checked.

## ETHICAL CONSIDERATIONS

The survey was authorized by the *Comité National d'Ethique de Recherche (CNER)* and the *Commission nationale pour la protection des données (CNPD)*.



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