

# Switzerland, Belgium - Bayesian latent class modelling to examine the diagnostic accuracy of the first hetero-assessment instrument for occupational burnout

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Report generated on: February 2, 2023

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## Overview

### Identification

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ID NUMBER  
10.16909/DATASET/35

### Overview

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#### ABSTRACT

Occupational burnout has no standardized diagnostic or screening criteria. Following a dozen of patient-reported outcome measures (PROMs) for occupational burnout, Belgian researchers developed the first hetero-assessment instrument (HAI) designed for health professionals' use. The HAI's sensitivity and specificity was previously assessed with reference to the Oldenburg Burnout Inventory (OLBI) using frequentist statistics in Belgium (100 participants) and Switzerland (42 participants). This study aimed at assessing the HAI's diagnostic performance using Bayesian latent class modelling (BLCM). We applied Hui-Walter framework for two tests and two populations and ran models with minimally informative priors, with and without conditional dependency between HAI and OLBI results. We further performed sensitivity analysis by replacing one of the minimally informative priors by the distribution beta (2,1) at each time for all priors. We also performed the analysis using literature-based informative priors for OLBI. Using the BLCM without conditional dependency, the sensitivity and specificity of the HAI was 0.91 (0.77-1.00) and 0.82 (0.59-1.00), respectively. The sensitivity analysis did not yield any significant changes in these results. In all models, the sensitivity was never below 0.82 and the specificity was never below 0.78. The HAI's sensitivity and specificity determined in this study are better compared to the previous studies conducted using frequentist statistics. These finding suggests that the use of BLCM is preferred in the absence of the diagnostic gold standard and precludes underestimating the diagnostic accuracy of the tested instrument.

#### KIND OF DATA

Secondary data in the form of tables based on the analysis of de-identified patient data. The tables were taken from other published articles.

Material made available are composed by tables (image in PDF) and R script.

#### UNITS OF ANALYSIS

The unit of analysis is the individual person

#### KEYWORDS

Burnout, Bayesian analysis, R scripts

### Coverage

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#### GEOGRAPHIC COVERAGE

Switzerland and Belgium

#### UNIVERSE

Patients from medical consultations with general practitioners (GP) and occupational physicians (OP)

### Producers and Sponsors

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#### PRIMARY INVESTIGATOR(S)

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Guseva Canu, Irina	Center for Primary Care and Public Health (Unisanté), Department of occupational and environmental health (DSTE)

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#### FUNDING

Name	Abbreviation	Role
The European Union's Horizon 2020 research and innovation program (under the Marie Skłodowska-Curie grant agreement No 801076, through the SSPH+ Global PhD Fellowship Program in Public Health Sciences (GlobalP3HS) of the Swiss School of Public Health) partly supported the PhD position of YS.	SSPH+ Global PhD	
Unisanté supported the other part, via the General Directorate of Health of the Canton of Vaud via the grant of the Commission for Health Promotion and the Fight against Addictions Grant N°8273/3636000000-801.		

## Metadata Production

#### METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Center for Primary Care and Public Health (Unisanté), University of Lausanne, Switzerland	Unisanté		Data publisher

#### DDI DOCUMENT VERSION

Version 1.0 (January 2023)

#### DDI DOCUMENT ID

10.16909-DATASET-35

## Sampling

### Sampling Procedure

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For the Swiss study: a convenience sample of patients received at the Unisanté “Work and Suffering” Consultation (WSC) between 2010 and 2013. WSC patients for whom a completed OLBI was available in their medical record along with the WSC detailed report were included.

For the Belgian study: The target population concerns people who have consulted a GP or an OP and who have expressed complaints and symptoms of suffering at work. Patients who filled OLBI and their clinical judgement using HAI can be linked were included.

## Questionnaires

No content available

## Data Collection

### Data Collection Dates

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Start	End	Cycle
2010-01-01	2013-12-31	for Swiss data
2019-01-01	2019-12-31	for Belgian data

### Data Collection Mode

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Data were taken from 2 published articles (2 tables available in image). Primary data were collected in the process of a medical consultation through questionnaires : one self reported and one filled in by the physician.

## Data Processing

### Data Editing

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No cleaning operation, data has been directly analyzed.

## Data Appraisal

### **Other forms of Data Appraisal**

No action necessary to appraise data.