

CHRIS Study

**Neuropsychiatry
questionnaire –
Perceived Stress Scale**

Version 1.1
24th April 2024

1. Introduction

This module stores information related to stress, that was collected with the neuropsychiatry questionnaire, part of the self-administered questionnaire.

Participants book a morning appointment at the CHRIS study center, ranging from 7.45 to 8.45 a.m. Each study participant is assigned a workflow at the reception. If there are ten study participants (maximum capacity), there are ten different workflows, marked with the letters from "A" to "K". The current workflow is as follows: A-B-C-D-E-F-G-H-I-K. All the workflows can be found in the documentation of CHRIS Baseline/General information/Administrative data, in the file named "Workflows at baseline assessment". The self-administered questionnaire is filled in always after the blood draw, for most before the interview (workflows B, C, E, F, H, I, L). For the remainder, the self-administered questionnaire is filled in just after the interview (workflows A, G) or after the interview and the ECG measurement (workflow D). The neuropsychiatry questionnaire was printed on paper and could be filled in at the study center, or at home and then returned by mail.

The Perceived Stress Scale (PSS) was developed by Cohen and colleagues to assess stress perception. It is a measure of the degree to which situations are deemed as stressful. Items were designed to detect how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale also includes direct queries about current levels of stress. The PSS was designed for use in community samples with at least a junior high school education. The questions are so general that are relatively free of cultural perception issues. Higher PSS scores were associated with, for example, failure to quit smoking, failure among diabetics to control blood sugar levels, greater vulnerability to stressful life-event-elicited depressive symptoms, or more colds. The PSS is not a diagnostic instrument, and there are no cut-offs for classification of respondents into "high," "medium," or "low" stress. It is generally used as an ordinal scale or count measure.

The PSS consists of 10 questions: respondents are asked how often they felt specific feelings or thoughts in the last month, on a 5-point Likert scale, ranging from "Never" to "Very often". Of those 10 questions, four were positively and six negatively formulated.

The assessment and selection of PSS for the CHRIS study was implemented under the supervision of Prof. Dr. Marcella Rietschel, Department of Genetic Epidemiology in Psychiatry, Central Institute of Mental Health, Medical Faculty, Mannheim, Univ. of Heidelberg.

The PSS was initially designed in English, and its German and Italian translation had already been validated.

The PSS questionnaire is available at CHRIS Baseline/Self-Assessment/Neuropsychiatry Questionnaire.

2. History version changes

Version 1 of this module was in use since November 25th, 2015.

The cleaning process added the variables x0pc11 and x0pc12.

3. Data cleaning

1. The main CHRIS dataset was loaded.
2. All the questionnaire items, x0pc01-x0pc10, had their missing observations set to:
 - a) "Not in use" (-98) if the examination date was before November 25th, 2015,
 - b) "Missing by design" (-99) if the exact age (not the rounded one x0_ager, but x0_age) was at least 65,
 - c) "Unexpected missing" (-89) otherwise.
3. The number of missing answers was investigated. Of those returning the neuropsychiatry questionnaires, 96% had no missing item of the PSS and just 1.1% had at least 5 missing items among x0pc01-x0pc10.
4. The negatively formulated PSS items were assigned a score as follows:
 - a) the answer "Very often" was assigned a score of 4,
 - b) The answer "Fairly often" was assigned a score of 3,
 - c) The answer "Sometimes" was assigned a score of 2,
 - d) The answer "Almost never" was assigned a score of 1,
 - e) the answer "Never" was assigned a score of 0.
5. The positively formulated PSS items, x0pc04, x0pc05, x0pc07, x0pc08, were assigned a score as follows:
 - a) the answer "Very often" was assigned a score of 0,
 - b) The answer "Fairly often" was assigned a score of 1,
 - c) The answer "Sometimes" was assigned a score of 2,
 - d) The answer "Almost never" was assigned a score of 3,
 - e) the answer "Never" was assigned a score of 4.
6. A PSS total score was created with values:
 - a) the sum of the scores related to x0pc01-x0pc10,
 - b) "Not in use" (-98) if the examination date was before November 25th, 2015,
 - c) "Missing by design" (-99) if the exact age (not the rounded one x0_ager, but x0_age) was at least 65,
 - d) "Unexpected missing" (-89) if any of the variables x0pc01-x0pc10, was "Unexpected missing".

It was saved as x0pc11.

7. A short 4-item PSS score was created with values:
 - a) the sum of the scores related to x0pc02, x0pc04, x0pc05, x0pc10,
 - b) "Not in use" (-98) if the examination date was before November 25th, 2015,
 - c) "Missing by design" (-99) if the exact age (not the rounded one x0_ager, but x0_age) was at least 65,
 - d) "Unexpected missing" (-89) if any of the variables x0pc01-x0pc10, was "Unexpected missing".

It was saved as x0pc12.

8. The baseline dataset was saved.

4. Advices for the analysis

The Perceived Stress Scale questionnaire does provide a total score based on all its ten items, as well as a shorter subscore with four items.

No other section of the CHRIS baseline measured stress, but anxiety was measured with the instruments State-Trait Anxiety Inventory STAI-Y-2, Mini International Neuropsychiatry Interview (MINI), part of the self-administered questionnaire, and it can be found in the modules x0sa and x0np.

Furthermore, anxiety was also reported in the neurology and other diseases modules of the interview, i.e. in the variables x0ne21*, x0ne22*, and x0ot*.

5. References

Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. J Health Soc Behav. 1983 Dec;24(4):385-96. DOI: [10.2307/2136404](https://doi.org/10.2307/2136404)

PhenX Toolkit Perceived Stress <https://www.phenxtoolkit.org/protocols/view/180801>