CHRIS Study

Touchscreen – Autonomic System COMPASS 31

Version 1.1

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1. **Introduction**

This module stores information related to the autonomic system of the participants, that was collected with the self-assessment questionnaire on a touchscreen.

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 Composite Autonomic Symptom Score (COMPASS 31) was developed by Sletten and colleagues and it is a questionnaire designed to assess autonomic symptoms in the general population.

The instrument consists of 31 items, that cover the following domains: orthostatic intolerance, vasomotor, secretomotor, gastrointestinal (composed of gastroparesis, diarrhea, and constipation subdomains), bladder, and pupillomotor. The respondent is asked if specific symptoms occur, in which part of the body, with which frequency and severity. Each domain has its own subscore, that are then summed up to create the autonomic symptoms score, with a range between 0 and 100.

The German and Italian translation were both created by IfB researchers, as no officially validated versions existed when recruitment started.

The COMPASS 31 questionnaire and its evaluation manual can be found as appendices of the original paper that validated the score (see References section).

2. **History version changes**

Version 1 of this module was in use since September 1st, 2014 and no version change occurred.

The cleaning process added the variables x0au06, x0au32, x0au33, x0au34, x0au35, x0au35a, x0au35b, x0au35c, x0au36, x0au37, and x0au38.

3. **Data cleaning**

1. The main CHRIS dataset was loaded.
2. All COMPASS items, x0au01-x0au31, were assigned "Not in use" (-98) if the examination date of the participant was before September 1st, 2014, i.e. if the questionnaire version x0auver was missing.
3. All the main COMPASS questions, on the occurrence of specific symptoms, x0au01, x0au05, x0au08, x0au09, x0au10, x0au11, x0au12, x0au13, x0au14, x0au15, x0au16, x0au20, x0au24, x0au25, x0au26, x0au27, x0au29, x0au31, had their missing observations set to "Unexpected missing" (-89).
4. All the subquestions of x0au01, i.e. x0au02-x0au04, had their missing observations set to:

a) "Missing by design" if x0au01 was "No",

b) "Unexpected missing" if x0au01 was "Yes" or "Unexpected missing".

5. All the subquestions of x0au05, i.e. x0au06a-x0au07, had their missing observations set to:

    a) "Missing by design" if x0au05 was "No",

    b) "Unexpected missing" if x0au05 was "Yes" or "Unexpected missing".

6. All the subquestions of x0au16, i.e. x0au17-x0au19, had their missing observations set to:

    a) "Missing by design" if x0au16 was "No",

    b) "Unexpected missing" if x0au16 was "Yes" or "Unexpected missing".

7. All the subquestions of x0au20, i.e. x0au21-x0au23, had their missing observations set to:

    a) "Missing by design" if x0au20 was "No",

    b) "Unexpected missing" if x0au20 was "Yes" or "Unexpected missing".

8. The subquestion of x0au27, i.e. x0au28, had its missing observations set to:

    a) "Missing by design" if the sunlight had bothered the sight only "Rarely" (x0au27=1),

    b) "Unexpected missing" if the sunlight had bothered the sight at least "Occasionally" (x0au27=2,3,4 or -89).

9. The subquestion of x0au29, i.e. x0au30, had its missing observations set to:

    a) "Missing by design" if trouble focusing the eyes occurred only "Rarely" (x0au29=1),

    b) "Unexpected missing" if trouble focusing the eyes occurred at least "Occasionally" (x0au29 =2,3,4 or -89).

10. The body part where skin color changes occurred, as saved in x0au06, was assigned the values:

    a) "Both" if both feet and hands were reported (x0au06a="Yes" and x0au06b="Yes"),

    b) "Either hand or feet" if only feet or hands were reported (x0au06a="Yes" and x0au06b="No", or x0au06a="No" and x0au06b="Yes"),

    c) "None" if neither feet nor hands were reported (x0au06a="No" and x0au06b="No"),

    d) "Missing by design" if no skin color changes were reported (x0au05="No"),

    e) "Unexpected missing" if x0au06 was still missing.

11. The number of COMPASS 31 missing items among x0au01-x0au31 was computed and explored. Among those who could complete COMPASS 31, 8.4 % had between 1 and 4 items missing, only 0.4% had at least 10 items out of 31 missing. The 89.8% of participants who could answer it had no COMPASS 31 item missing.

12. From each COMPASS item x0au01-x0au31, a subscore was computed according to the conversion schema in the scoring guidelines (see References section).

13. The orthostatic intolerance domain score was computed summing the subscores derived from x0au01, x0au02, x0au03, and x0au04. It was saved as x0au32. If any of x0au01-x0au04 was "Unexpected missing", also x0au32 was assigned "Unexpected missing".

14. The vasomotor domain score was computed summing the subscores derived from x0au05, x0au06, and x0au07. It was saved as x0au33. If any of x0au05-x0au07 was "Unexpected missing", also x0au33 was assigned "Unexpected missing".

15. The secretomotor domain score was computed summing the subscores derived from x0au08, x0au09, x0au10 and x0au11. It was saved as x0au34. If any of x0au08-x0au11 was "Unexpected missing", also x0au34 was assigned "Unexpected missing".

16. The gastroparesis subdomain score was computed summing the subscores derived from x0au12, x0au13, x0au14 and x0au15. It was saved as x0au35a. If any of x0au12-x0au15 was "Unexpected missing", also x0au35a was assigned "Unexpected missing".

17. The diarrhea subdomain score was computed summing the subscores derived from x0au16, x0au17, x0au18, and x0au19. It was saved as x0au35b. If any of x0au16-x0au19 was "Unexpected missing", also x0au35b was assigned "Unexpected missing".
18. The constipation subdomain score was computed summing the subscores derived from x0au20, x0au21, x0au22, and x0au23. It was saved as x0au35c. If any of x0au20-x0au23 was "Unexpected missing", also x0au35c was assigned "Unexpected missing".
19. The gastrointestinal domain score was computed summing its subdomain scores, x0au35a, x0au35b, and x0au35c. It was saved as x0au35. If any of x0au35a-x0au35c was "Unexpected missing", also x0au35 was assigned "Unexpected missing".
20. The bladder domain score was computed summing the subscores derived from x0au24, x0au25, and x0au26. It was saved as x0au36. If any of x0au24-x0au26 was "Unexpected missing", also x0au36 was assigned "Unexpected missing".
21. The pupillomotor domain score was computed summing the subscores derived from x0au27, x0au28, x0au29, x0au30, and x0au31. It was saved as x0au37. If any of x0au27-x0au31 was "Unexpected missing", also x0au37 was assigned "Unexpected missing".
22. The autonomic symptom score was computed summing the domain scores of x0au32, x0au33, x0au34, x0au35, x0au36, and x0au37. It was saved as x0au38. If any of the domain score variables x0au32-x0au37 was "Unexpected missing", also x0au38 was assigned "Unexpected missing".
23. The baseline dataset was saved.

4. Advices for the analysis

The COMPASS 31 score has been computed for the participants with all answers available in x0au01-x0au31.

Associated with the instrument, there are also seven subscores that relate to specific domains: the orthostatic intolerance domain score (x0au32), the vasomotor domain score (x0au33), the secretomotor domain score (x0au34), the gastrointestinal domain (x0au35), bladder domain score (x0au36), and pupillomotor domain score (x0au37). Furthermore, the gastrointestinal domain has three subdomains with their own score: gastroparesis (x0au35a), diarrhea (x0au35b), and constipation (x0au35c).

Additional information related to the domains covered by COMPASS 31 can be found in the other diseases module x0ot.

5. References

Sletten DM, Suarez GA, Low PA, Mandrekar J, Singer W. COMPASS 31: a refined and abbreviated Composite Autonomic Symptom Score. Mayo Clin Proc. 2012 Dec;87(12):1196-201. DOI: 10.1016/j.mayocp.2012.10.013

COMPASS 31 text: Appendix 2 of Sletten et al. 2012.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3541923/bin/mmc2.pdf

Scoring guidelines: Appendix 3 of Sletten et al. 2012.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3541923/bin/mmc3.pdf