

8.1 Description of Measures

8.1.1 Cognitive Status

Raven's Advanced Progressive Matrices Test (Raven) consisted of 36 matrices of different geometrical patterns, with the bottom right cell missing. Subjects had to select the correct pattern to complete the matrix from a set of six or eight alternatives displayed below the matrix. The test was terminated after 15 minutes. The score used corresponds to the number of correct responses.

The Digit-Symbol Substitution template (DS; the Wechsler version of the test was used) contained nine digit-symbol mappings. Subjects had to fill in the symbol that corresponded to the digit. The score was the total number of correct symbols after 90 s. The maximum number of correct answers was 93 items.

Spot-a-Word consisted of 35 items that contained one correct word and four nonwords. The participants were instructed to mark the word. Testing time was unlimited. However, all adults managed to complete the test within 10 minutes. The score was the number of correct words.

8.1.2 Health Status

Visual acuity was measured in Snellen decimal units, where a value of 1.0 is taken to indicate normal vision, as normed in younger adults. Analyzing visual acuity of the BASE sample, Marsiske et al. (1999) refer to nonimpaired vision if a value is 0.8 Snellen decimal or greater. Measurements were taken at two different distances using different standard reading tables (Geigy, 1977). Distance visual acuity was assessed binocularly using two reading tables presented at a distance of 7.5, 5, or 2.5 m to the subject. Close visual acuity was measured separately for the left and the right eye using two reading tables presented at a reading distance. All measurements were taken with and without the best optical correction available to the subject. When reporting vision scores, I always refer to the better values because the actual amount of sensory input is the critical variable (see Lindenberger & Baltes, 1994). In the case of older adults this was always the corrected vision. Based on the average of close and distance visual acuity, younger adults met the

criterion for “normal” vision⁵⁰, whereas visual acuity of older participants can be characterized as impaired.

Auditory acuity was assessed with a Bosch ST-20-1 pure-tone audiometer using headphones. Thresholds were measured for the right and left ears at eight different frequencies: 1.00, 2.00, 3.00, 4.00, 6.00, 8.00, 0,50, and 0,25 kHz. Testing always started with the frequency of 1.00 kHz and proceeded within the range of high frequencies followed by the low frequencies. The order of frequencies and ears was varied. The participants were instructed to raise their left hand as soon as they heard a tone with their left ear. The hearing ability of the right ear was measured similarly. The loudness of the pure tone was continuously increased until research participants signaled that they were able to hear the tone. Hearing thresholds were measured in decibel units on a continuous scale ranging from 0 (*high hearing ability*) to 100 (*low hearing ability*). Although pure-tone auditory thresholds (dB) at eight different frequencies were measured, I report the age-group threshold differences based on the average threshold at 0.25, 0.5, 1.0, and 2.0 kHz, as the hearing ability within this range is important for task performance. The hearing of the right versus left ear did not differ in the young ($t(17) = -.10, n. s.$) and older adults ($t(16) = -1.34, n. s.$). Thus, the data on hearing referred to in this study denote the average threshold of both ears.

Strength of grip, knee extension, and ankle flexion was measured by standardized dynamometry. The strength of each left and right extremity was measured three times. Reporting the strength of the sample, I refer to the best performance, that is, maximum strength available.

Number of diseases was measured by asking the participants to indicate whether they have been treated at least once for the following diseases: stroke, paralysis, unconsciousness, convulsions, vertigo, numbness of hands and feet, Parkinson’s disease, cardiac arrhythmia, cardiac infarction, high blood pressure, low blood pressure, diabetes, arthritis of hands, or arthritis of other joints. Older adults indicated 8, and young participants reported 3 out of 14 diseases listed in the questionnaire.

Sport activities were assessed by a single-item indicator. The participants were asked whether they go in for sports regularly. Both the younger (77.8%) and the older

⁵⁰As can be seen in Table 4, some young and older adults had vision scores above 1.0. These values came about because I always reported the better values, that is, the visual acuity with the best optical correction available to the subject.

(61.1%) subsamples were engaged in one or more sport activities with no significant age-group difference in the distribution.

Satisfaction with life, physical and mental health was assessed with three single items. Participants were asked to indicate how satisfied with their lives, physical and mental health they were at the time of the interview. Responses were given on a 5-point Likert scale (5 labeled as “not at all”, 1 as “very good”) and recoded for statistical analyses so that higher scores on every item indicated greater satisfaction.

8.1.3 Life Management

The SOC-Strategies questionnaire was used in a 24-item version. It comprises four scales (6 items each). Participants were asked to choose between a target item describing SOC-behavior and a distractor item. For the purpose of statistical analyses, the targets were coded “1” and the distractors “0”. The 4 subscales had the following internal consistencies of Cronbach’s α : Elective selection (ELS): $\alpha = .73$; Loss-based selection (LSB): $\alpha = .49$; Optimization (OPT): $\alpha = .44$; Compensation (COM): $\alpha = .55$. The age groups were compared on the mean number of target choices.

The Tenflex questionnaire comprises two scales (10 items each) assessing tenacious goal pursuit versus flexible goal adjustment. Participants gave responses on a 7-point scale (1 = “not at all true” to 7 = “very true”). After recoding negatively formulated items, averaging across 10 items yielded a subscale score that indicated the person’s tenaciousness versus flexibility. The scales had internal consistencies of Cronbach’s $\alpha = .71$ for tenaciousness and $\alpha = .69$ for flexibility.