

## Supplemental Digital Content 1, measurements

### Materials & Methods

#### Standardized measurements

The computer-based self-assessment of lifestyle risks comprised the following standardized measurements: WHO-5 (World Health Organization 5-item Well-Being Index),<sup>1,2</sup> AUDIT (Alcohol Use Disorder Identification Test),<sup>3</sup> BASOC (Brief Assessment of Sense of Coherence).<sup>4</sup>

Depression was assessed with the 5-item depression screening instrument WHO-5.<sup>1,2</sup> The objective of this questionnaire is to identify depression by measuring decreased well-being.<sup>1,2</sup> The 5 items of the WHO-5 measure self-report of psychological well-being during the last 2 weeks and cover mood, interests, energy, sleep and psychomotor functioning. These domains correspond to essential symptoms of depression, i.e. decreased mood, lack of interests, lack of energy, sleep disturbance, as well as psychomotor changes.<sup>1,2</sup> Responses are rated on a 6-point Likert scale from 0 to 5 with sum scores ranging from 0 to 25, and higher scores indicating better well-being. The internal consistency of the WHO-5 is high showing Cronbach's alphas of .84 and .91 in the studies of Bech *et al.*<sup>1</sup> and Loewe *et al.*<sup>5</sup>, respectively. Construct validity is indicated by correlations of -.76 and -.73, respectively, between the WHO-5 sum score and the depression subscales of the HADS (Hamilton Anxiety and Depression Scale) and the PHQ (Patient Health Questionnaire).<sup>5</sup> The studies of Henkel *et al.* (2004)<sup>6</sup> and Löwe *et al.* (2004)<sup>5</sup> found evidence for the validity of the WHO-5 for detecting any depressive disorder with, depending on different cut-off points, sensitivity ranging from .75 to .93 and specificity from .64 to .84. A sum score  $\leq 13$  indicates poor well-being<sup>2</sup> and has shown 89% sensitivity and 86% specificity to identify a mild to severe depressive state as measured by the Center for Epidemiological Studies Depression Scale (CES-D);<sup>7</sup> importantly, with this cut-off point the WHO-5 has proven superior as compared to the Brief PHQ and the GHQ (General Health Questionnaire) with regard to detect any depressive disorder including subthreshold depressive syndromes (dysthymia, major depressive disorder and minor depression according to the research criteria of DSM-IV).<sup>6</sup> Scores  $\leq 13$  indicate a considerable loss of positive mood, energy and interest in activities, as well as a substantial decrease of sleep quality and psychomotor functioning. Because depression is mainly characterized by a loss of these psychological functions, a significant decrease of well-being can be interpreted as indicating a clinically relevant depressive state including the whole spectrum of depressive affect ranging from transient mood disturbance to full-blown depressive disorders. However, screening results below the WHO-5 cut-off point may not be interpreted as diagnoses of mood disorder according to ICD-10 or DSM-IV-R.<sup>2</sup>

The AUDIT is a 10-item screening instrument for excessive alcohol drinking.<sup>3</sup> This questionnaire assesses on a 5-point Likert scale from 0 to 4 symptoms of hazardous and harmful alcohol consumption, as well as alcohol-related problems and symptoms of dependence, resulting in a sum score ranging from 0 to 40 with higher scores indicating more severe alcohol problems. In this study the cut-off points for having any alcohol use disorder were set to  $\geq 8$  for men and  $\geq 5$  for women.<sup>8</sup> Several studies on the psychometric properties of the AUDIT have reported indices of high internal consistency that are generally in the .80's, average sensitivities of .90 for various indices of problematic drinking, and specificities in the .80's (for review see <sup>3,9</sup>).

The 3-item self-report questionnaire BASOC measures the construct "Sense of Coherence" on a 6-point Likert scale from 1 to 5, with sum scores ranging from 3 to 15.<sup>4</sup> "Sense of coherence" represents the core construct of Antonovsky's salutogenetic model and describes the general capacity to adopt a coherent perspective of one's life and essence of existence. In particular, sense of coherence constitutes the way people deal with specific situations and is based on the components comprehensibility (the ability for people to understand what happens around them), manageability (the experience that they are able to manage the situation), and meaningfulness (the ability to find meaning in a situation). The BASOC contains 3 items of the 29-item-questionnaire SOC-29 (Sense of coherence-29)<sup>10</sup> that were chosen after detailed psychometric analyses and have proven superior to alternative 3-item versions of the SOC-29. The scale has shown sufficient reliability for a 3-item instrument (Cronbach's alpha of .71) and good validity (correlation between BASOC and SOC-29 excluding BASOC items of  $r = .77$ ; correlations with different health measures ranging from  $r = .45$  to  $r = .63$ ).<sup>4</sup>

#### References

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