The Evidence Base of Salutogenic Research
quantitative research and longitudinal research

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Sense of coherence (SOC)

- concept introduced by Aaron Antonovsky 1979
- still an interesting research tool
  - focused on confidence
  - tension is inevitable
- generalized resistance resources (GRR) represent micro- and macrolevel
- oriented toward causes of health rather than illness
Definition of sense of coherence

Global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that
Definition of sense of coherence, cont.

(1) the stimuli from one’s internal and external environments in the course of living are structured, predictable, and explicable and

(2) the resources are available to one to meet the demands posed by these stimuli, and

(3) these demands are challenges, worthy of investment and engagement.
Sense of coherence

29-item (SOC-29) and 13-item (SOC-13) scales or adaptations of these

Subcomponents
- comprehensibility
- manageability
- meaningfulness
The three item SOC – scale (Lundberg 1995)

Do you usually feel that the things that happen to you in your daily life are hard to understand? (comprehensibility),

Do you usually see a solution to problems and difficulties that other people find hopeless? (manageability), and

Do you usually feel that your daily life is a source of personal satisfaction? (meaningfulness).
SOC and demographic background

No clear pattern related to association with gender but according to some studies men’s comprehensibility and manageability somewhat stronger, and women’s meaningfulness somewhat stronger.

With increasing age somewhat stronger SOC but this is probably due to health selection.
SOC and demographic background

The higher the social status measured as level of education or socio-economic status or income the stronger SOC (e.g. Lundberg and Nyström Peck 1994, Suominen et al 1999)
Internal consistency of the SOC - scale

SOC – 29 (Eriksson 2007) Cronbach’s Alpha 0.70 to 0.95 based on 124 studies

SOC-13 (Eriksson 2007) 0.70 – 0.92 based on 127 studies
Stability of SOC

Antonovsky A. The structure and properties of the sense of coherence scale Soc Sci Med 1993:36:725-733, test – retest, mostly SOC – 29 item: r > 0.50

The length of the follow-up in prospective studies at that time, however, quite limited
Stability of SOC, cont.

- 3 y of follow-up $r=0.64$ (Kivimäki et al 2000), 4 y $r=0.42-0.45$ (Smith et al 2003), 5 y $r=0.59-0.67$ (Coe et al 1998)

- According to theoretical assumptions by Antonovsky SOC is stable but first after once having grown strong

- Convincing empirical evidence for this is lacking
Hakanen et al 2007

the Healthy Child study conducted in 1961 - 1963

in 1985 a postal survey N = 1,059, response rate 77 \% ; N = 817, SOC - 13, 706 employed

in 1998 a new survey to those employed, response rate 89 \% , N = 614, r = 0.59

Factor Mixture modelling identified two groups with different levels and mean changes of SOC

strong SOC r = 0.57, weak SOC r = 0.31, now SOC - 11
Structure of the SOC-scale

- Antonovsky 1993: unidimensional scale
- Feldt et al. 2005, Finnish technical designers (N=352) aged between 25 and 40 years in 1992. A total of 51% of the investigated participants had been employed full-time during the 5-year follow-up period and 49% had been unemployed and/or laid off for a total period of at least one month during the follow-up.

The confirmatory factor analysis indicated that the SOC scale measured one general second-order SOC factor consisting of three, first-order factors of meaningfulness, comprehensibility, and manageability. SOC-11 fitted best.
Structure of the SOC-scale, cont.

- Feldt et al 2006 Health and Social Support Study
  - confirmatory factor analysis
- postal surveys 1998, N=21 101 (40 %) and 2003, N=19 675
- SOC-13, correlated three factor solution for the SOC scale and its equivalent second order structure
- SOC more stable among subjects over 30 years
SOC as a predictor of health

- Perceived Health and Life control - study, initiated in 1989 (Suominen et al 2001, 2005)
- N=5 000, a postal survey 1989 response rate 68%
- a follow-up survey in 1993, SOC-16, adapted from SOC-29
- a strong SOC independently and significantly predicted good perceived state of health
- in 2000 anonymous completion of the data with health register data
- among individuals initially 50 years or less, lower scores of SOC independently and significantly predicted increased risk of disability pensioning
The EPIC-Norfolk cohort study (e.g. Surtees et al. 2003): weak initial SOC was associated with increased all-cause mortality, cardiovascular and cancer mortality.

Helsinki Heart Study (Poppius et al. 1999, 2006): weak SOC associated with increased risk of coronary heart disease among white collar workers only and among blue collar workers with increased risk of cancer, applied best to subjects > 55 y.
Some open questions related to quantitative research

- Can SOC – scores be interpreted individually?
- Should the SOC – scale be solely interpreted as a linear scale?
- The stabilization process of SOC needs further clarification (also need for qualitative research)
- Does a certain score represent various states for different individuals (need for qualitative research)?