Hearing-related application of the SOC model: Adaptive strategies as indicators of successful aging with hearing loss

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Background

- Successful aging goes beyond achievement of desirable outcomes (i.e. QoL, health, well-being)
- Reflects human capacities such as loss adaptation and mastery of changes over the life span (i.e. major life events)
- Model of Selective Optimization with Compensation (SOC[1]) describes such behavioral strategies
- Strategy use was found to be positively related to indicators of successful aging[2]
- Diagnosis of age-related HL and HA uptake are major live events – SOC adaptation process?

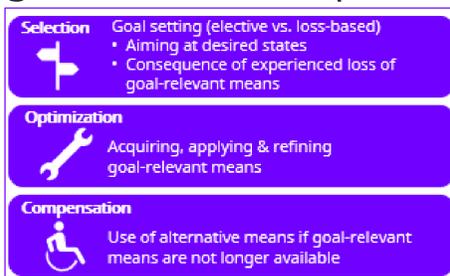| Selection | Goal setting (elective vs. loss-based)
• Aiming at desired states
• Consequence of experienced loss of goal-relevant means |
| Optimization | Acquiring, applying & refining goal-relevant means |
| Compensation | Use of alternative means if goal-relevant means are not longer available |

Fig 1.: Definition of SOC strategies adapted from Baltes & Freund (1999).

Research aims

- SOC-based conceptual framework on the use of hearing-related adaptive strategies
- Explanation of successful aging with hearing loss from onset to permanent use of HAs

Methods

- Literature review
  - Questionnaires *(e.g. Demorest (1987): Communication profile for hearing-impaired)*
  - Articles on qualitative research with hearing-impaired and hearing care professionals *(e.g. Bennett et al. (2021): Coping with challenges and distress associated with HL)*
  - Publications on age-related losses *(e.g. Brennan & Cardinali (2002): Coping strategies in vision loss)*
- SOC – based clustering by two independent reviewers
- Questionnaire development (Psychologists & Audiologists)

Results & Outlook

Tab 1.: Proposed SOC-based conceptual framework for hearing-related adaptive strategies (HRAS) and example items in the corresponding questionnaire.

	Selection Conscious selection of situations/activities in form of actively seeking them out or avoiding them			Optimization Optimal use of available resources & optimization of contexts with specific behavioral strategies to optimize the overall hearing ability				Compensation Compensation of hearing loss by acquisition of new resources	
Sub-dimension	Avoidance of listening challenges	Selective HA handling (HA users only)	Elective Selection of situations	Environ-mental control	Preparation and Planning	Acquiring new skills and knowledge	Communication strategies (adaptive & maladaptive)	Help of others	External devices
Description	Avoidance of situations where people have a hard time hearing	1. Selective HA use and 2. modifying the HA depending on situational needs	Active elective selection of situation in which participants can hear well or bene-fit the overall listening experience	Controlling environmental factors in favor of the listener	Prospective preparation of resources and planned allocation of effort	Skills & know-ledge to im-prove communication skills, change coping; learning about aux. means & optimal use	Strategies to improve communication	Help of others is recruited or used in communication, accommodation of needs, or social support	Use of de-vices to improve commu-nication or enter-tainment, or to help manage other domains of daily life
Example item	If I have a hard time hearing in a situation or during an activity, I tend to "zone out" internally.	I plan beforehand in which situations I wish to use my hearing aids.	If I have the choice, I cons-ciously select activities or situations where I know that I can hear well.	If I have a hard time hearing, I try to position myself so that I can hear as well as possible.	I plan sufficient rest time before or after tiring listening situations.	I participate in auditory training programs, (e.g., classes or online tutorials).	I pay close attention to speakers' faces. I ignore people when I cannot understand them.	I ask my communication partners to get my attention before speaking.	I use hearing technology to help me hear better.

- Online survey on HRAS questionnaire in German & English (N=100; ongoing)
- Control variables: Severity of subjective HL, status patient journey (adapted URICA[2,3]), health & life satisfaction
- Following step: Revision of HRAS questionnaire
  - Psychometric properties: Reliability, validity of items
  - SOC model (confirmative PCA for subcomponents; convergent validity with SOC scale)
- Longitudinal field study planned to start in Autumn 2022

Please support our HRAS scale development:

https://survey.iis.fraunhofer.de/index.php/338337?lang=en

Participate, if you have hearing difficulties or help by sharing it with affected people or communities.

[1]Baltes, P.B., & Baltes, M.M. (1990). Psychological perspectives on successful aging: the model of selective optimization with compensation. In Baltes P.B., & Baltes M.M. (eds): *Successful Aging: Perspectives from the Behavioral Sciences* (pp. 1–34). New York: Cambridge University Press.

[2]Lang, F. R., Rieckmann, N., & Baltes, M. M. (2002). Adapting to aging losses: Do resources facilitate strategies of selection, compensation, and optimization in everyday functioning? *Journal of Gerontology, 57(6),* 501–509

[3]Manchaiah, V. K. C. (2013). *Evaluating the process of change: Studies on patient journey, hearing disability acceptance and stages-of-change.* Department of Behavioural Sciences and Learning.

[4]Laplante-Lévesque, A., Hickson, L., & Worrall, L. (2013). Stages of change in adults with acquired hearing impairment seeking help for the first time: application of the transtheoretical model in audiologic rehabilitation. *Ear and hearing, 34(4),* 447–457.

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