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Age Lecture Intervention:  
Age Stereotypes & Self-Perceptions of Aging

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### **Age Lecture Intervention: Age Stereotypes & Self-Perceptions of Aging**

Over the last 200 years age stereotypes have become more negative (Ng et al., 2015). Older adults and aging are heavily under-represented and often inaccurately depicted according to stereotypes (Kessler et al., 2004; Raman et al., 2008; McConatha et al., 1999).

Negative stereotypes about aging have immense effects for young and old (Levy et al., 2006, 2009, 2016). We internalize age stereotypes throughout our life, and they influence our self-perceptions on aging (Levy, 2009; Wurm et al., 2017). These loss-oriented self-perceptions of aging than act as self-fulfilling prophecies and again lead to negative outcomes (Wurm et al., 2013; Wurm et al., 2017). To reduce negative and strengthen positive effects of positive age stereotypes and positive self-perceptions of aging, interventions were developed (Knight et al., 2021). One way of reducing negative aging stereotypes is knowledge (Donizzetti, 2019). As part of the third missions of universities, they are required to make knowledge accessible and applicable beyond academia to actively contribute to increasing social, economic and societal challenges (Zomer & Benneworth, 2011; Universität Wien, n.d.).

Most interventions focused on a younger age group and were tested in the United States, while some also looked at an older age group, but interventions that combined all age groups are rare. (Chonody, 2015; Knight et al., 2021; Burnes et al., 2019; Bétrisey et al., 2023; Doncel-García et al., 2022). Since the stereotype embodiment theory (SET) states how all age groups are affected by stereotypes and educational interventions have showed effects for young and old, there is a need for interventions that improves aging knowledge for adults of all ages (Levy, 2009; Chonody, 2015; Knight et al., 2021; Burnes et al., 2019; Bétrisey et al., 2023; Doncel-

García et al., 2022). Especially, because all age groups are affected by age stereotypes and have self-perceptions of their aging and focusing only on younger or older participants can also be seen as a form of age discrimination.

Creating a one time on site-lecture about aging for all age groups in Austria is relevant in many ways.

Firstly, age-related interventions may have different effects in the United States compared to Austria or Europe due to varying cultural attitudes toward aging, welfare systems and societal structures. The US placing more emphasis on market-based, individualistic solutions compared to Austrias social welfare models and intergenerational solidarity, these systemic differences might influence both the perception of aging and old people as well the interventions themselves (North & Fiske, 2015).

Secondly, lack of, or inadequate aging knowledge runs through all age groups. High school students showed poorest knowledge about memory aging issues than all other age groups (Cherry et al., 2014). Teachers lack training in aging education and both teachers and students feel like including aging in the curriculum would be beneficial (Davis & Soka, 2019). Knowledge about the aging process helps older adults decrease aversive uncertainty and reduce worrying. It also increased positive views of aging as well as positive attitudes toward older adults in college students, who were enrolled in gerontology courses or aging education interventions (Nuevo et al., 2009; Wurtele, 2009; Wurtele & Maruyama, 2013; Ragan & Bowen, 2001). Greater knowledge of aging is also associated with higher life satisfaction among older adults (Davis & Friedrich, 2004).

Lastly, all studies I know of, so far imparted the knowledge on a digital way, like showing videos, a documentary, letting participants fill out facts or reading aging statements or over multiple occasions (Knight et al. 2021). This approach might not be suitable for everybody. Once because not everybody has the resources for multiple sessions over many weeks and secondly, because even though older people overall feel like technology has a positive impact on society, almost three quarters of older adults lack confidence in their ability to complete online tasks on devices and 43% of adults over 70 in Austria did not use the internet in 2022 (Anderson & Perrin, 2017; Statista, 2024). Additionally independent from having access to the internet, some simply might prefer on-site events over online lectures (Jaggars, 2014). For 41% of the students the biggest benefits of online lectures are them being convenient and accessible, whereas 68% of students stated that what they liked best in in-class lectures is “more interaction/more engaging/keeps attention” (Jensen, 2011).

Higher income and higher education are linked to a higher probability of being an internet user, but since lower educated people seem to have more stereotypes, it is important that knowledge is also accessible without access to the internet (Anderson & Perrin, 2017; Hunsaker & Hargittai, 2018; Spangenberg et al., 2017). This study therefore aims to answer the question, if an one-time on-site knowledge-sharing event can reduce negative age stereotypes and improve self-perceptions of aging among adults across all age groups?

## Theory

### Views of Aging

#### **Age Stereotypes**

Age stereotypes, in this study are defined as socially shared expectations and beliefs about age, the process of aging and older people as a group (Wurm et al., 2017; Rothermund & de Paula Couto, 2024). They can be gain-oriented for example about ongoing growth as well as loss-oriented concerning social or physical losses. These beliefs can lead to ageism, a form of discrimination (Levy, 2003). In recent years stereotypes about older adults have become more negative, especially with the onset of the COVID-19 pandemic (Levy, 2017; Monahan et al., 2020). The medicalization and the growing proportion of people 65 and older might be reasons for this increase in negative age stereotypes (Ng et al., 2015).

According to the stereotype content model by Fiske et al. (2002) we categorize people according to perceived warmth and competence. Older people are perceived as high in warmth and low in competence (Fiske et al., 2002). This is congruent with a finding of older characters in Dutch media more often being depicted as warm compared to younger people who are more often presented as competent (Lepianka, 2014).

Associations of the older generation tend to focus on disability, dementia, inactivity, and dependency, rather than on vitality, competency, activity, and productivity (McGuire, 2005). Analysis of Contemporary American English found six times more negative than positive depictions of older adults (Ng, 2021).

According to the Stereotype Embodiment Theory (SET) we internalize all these negative depictions of aging and old people as age stereotypes continuously through our life. This process starts when we are children, where we operate these stereotypes

unconsciously, because they do not concern us at this age and we might even profit from them. But they start gaining importance when we get older as they become self-relevant and affect us through multiple pathways (Levy, 2009). In addition, these expectations about aging and being old appear to act as self-fulfilling prophecies due to self-stereotypes (Levy et al., 2002; Levy & Leifheit-Limson, 2009).

Negative stereotypes can have negative short-term and long-term effects on young and old people. Levy et al. (2000) primed participants older than 62 either with positive age stereotypes, like creative, improving and wise or negative age stereotypes, like forgets, senile and dementia. Negative stereotypes lead to heightened cardiovascular response to stress, whereas positive ones led to reduced cardiovascular stress. Other effects of priming with negative age stereotypes resulted in worse balance, inferior memory performance as well as shakier handwriting (Levy & Leifheit-Limson, 2009; Levy, 2000). These effects were stronger when the age stereotypes corresponded to the outcome domains, which is also called stereotype matching effect and could be explained by self-fulfilling prophecies (Levy & Leifheit-Limson, 2009). Depending on the context, life domain or situation different age stereotypes may be triggered (Kornadt & Rothermund, 2011).

Short-term effects of stereotype activation are only a part of the picture. Age stereotypes also have been associated with tremendous long term health outcomes. Young people with more negative age stereotypes for example had a higher chance of brain changes that are associated with Alzheimer's disease, cardiovascular events and worse health behaviours, like tobacco use, when they were older (Levy et al., 2016; Levy et al., 2009). While people that held more negative age stereotypes also had a higher probability of worse hearing within a period of 3 years older adults with

positive age stereotypes on the other hand were 44% more likely to recover from disability than those with negative age stereotypes (Levy et al., 2006; Levy et al. 2012).

### ***Self-Perception of Aging / Awareness of Age-Related Change***

Another concept relating to aging are the self-perceptions of aging. This concept focuses on the perception people have on their own aging experience. Awareness of age-related change is a sub-concept of self-perceptions of aging that refers to a person's conscious and explicit recognition of how their behaviours, abilities, and experiences have changed because of getting older (Diehl & Wahl, 2010; Diehl et al., 2014; Wurm et al., 2017). They can be perceived as age-related gains, such as less responsibility, more freedom, possibilities to learn something new, being generative or heightened competence and life experience as well as age-related losses, which can be physiological, psychological or social losses. (Brothers et al., 2019; Steverink et al., 2001). Positive self-perceptions of aging are associated with numerous health outcomes like better self-rated health, greater longevity, lower obesity, better cognitive abilities, less depression and better performance on daily life activities (Levy et al., 2002; Tully-Wilson et al., 2021). Loss-oriented self-perceptions on the other hand were associated with slower walking speed, which is an indicator for physical functioning (Robertson et al., 2015). Together with many other factors higher loss-oriented self-perceptions of aging during the first week of COVID-19 lockdown, was associated with higher distress and loneliness (Losada-Baltar et al., 2021). Additionally older participants who had more gain-oriented self-perceptions of aging lived up 7.5 years longer (Levy et al., 2002).

### **Educational Interventions**

Knowledge as in depicting a realistic and diverse picture about old people and aging could disrupt this process of unquestioned internalization of age stereotypes, that happens throughout our life according to Levy (2009). One could argue that rising awareness to the discrepancy of what people subconsciously might think how people age and how the life of old people is, could create mindfulness and stop the automatic activation of stereotypes. Lueke and Gibson (2015) found that listening to a mindfulness meditation audio reduced age bias by weakening automatic associations.

The Positive Education about Aging and Contact Experiences (PEACE) Model proposes two key factors for reduction of negative age stereotypes, aging anxiety, prejudice and discrimination of aging and with older adults. The first factor is providing information about aging, which includes facts and showcases positive older role models to challenge negative and inaccurate aging images. The second factor is individualized, cooperative contact experiences with older adults of equal status, where personal information is shared (Levy, 2016). Extended Contact Theory proposes that knowing that one's friends in the in-group have friends in an out-group provides numerous similar benefits of having in-person intergenerational friendships (Wright et al., 1997). Even just imagining contact with a 75-year-old male or female adult was associated with more positive expectations of ageing in male participants. This effect was mediated by ageing anxiety in male participants. Interestingly, this effect was not found for females (Lytle & Levy, 2017).

Educational interventions, like used in this study act on the assumption that limited knowledge leads to believing stereotypes (Bétrisey et al., 2023). This could be because information offers new perspectives of thinking. Several studies found

negative correlations between knowledge and ageism, negative attitudes toward older adults or age stereotypes (Allan & Johnson, 2008; Gellis et al. 2003). Allport (1954) argues that stereotypes reduce the complexity of social information, and we rely on them to rapidly predict behaviour. Based on this, knowledge could increase the awareness of this process and emphasizes reflecting if alternative behaviours are possible. Educational interventions, like reading articles or watching videos that challenge age stereotypes, have been found to increase gain-oriented perceptions of aging, reduce agism and improve knowledge about older adults in students and community participants (Macdonald & Levy, 2020; Lytle & Levy, 2022)

After analysing 24 studies on agism interventions in youth Bétrisey et al. (2023) concluded that nuanced information about aging and older adults transformed their perceptions of older people into more positive and realistic opinions. Important seems to be that similarities between generations are identified and stereotypes are questioned, as well as rising awareness to the diversity among older adults their needs and concerns.

Anxiety about aging and knowledge may predict age stereotypes, these age stereotypes together with other factors influence ageism, beside from that it seems to also influence self-perceptions of aging (Donizzetti, 2019; Wurm et al., 2017, Brothers et al., 2021).

Another path the knowledge inducing intervention could take is through the reduction of uncertainty and anxiety, if we assume that both lead to stereotypes. In the special case of age stereotypes uncertainty and anxiety might not only emerge by the out-group, but also by aging and becoming the out-group over time. An empiric study by Allan and Johnson (2008) supports this assumption. They found that anxiety of

aging did mediate the effect of factual knowledge on ageist attitudes in a sample of college students. Similar results were found by Donizzetti (2019). In this study anxiety predicted age stereotypes, and more knowledge did predict lower aging anxiety and lower stereotypes toward older adults, but the indirect path was not tested. A study by Nuevo et al. (2009) also showed that greater knowledge was negatively associated with intolerance and uncertainty.

### **Education as Moderator**

The level of education could also influence the effectiveness of the lecture. Higher educated people have an advantage to absorb, process and comprehend the presented information, simply because they are more used to the setting of a lecture and practised that skill to attain their educational level. The *Elaboration Likelihood Model* suggests that higher educated people rely more on a central route of more deep analytic information processing, whereas lower educated people rather engage with information through a peripheral route that relies on heuristic cues (Petty & Cacioppo, 1986). Greater cognitive and metacognitive resources, like the ability to integrate new information have been associated with higher educational attainment (Alexander & Jetton, 2000). Andreoletti and Lachman (2004) provide insight that these general advantages in information processing for higher educated people might also be relevant in the effectiveness of this study, because they found that counter stereotypical information led to higher recall rates in higher educated people, but less recall in less educated, both compared to a control group that received no information regarding stereotypes. Another study that might provide insight is by Miner-Rubio et al. (2004). They found non-college-educated men recalling the highest levels of concern about aging across age. Following with the finding that lower educated people have

the highest rates of aging anxiety, inducing knowledge might reduce the aging anxiety levels by providing alternative, less fearful perspectives about aging and old people. But another plausible explanation could be that higher educated people have less anxiety because they have a better financial backstop. Having higher levels of education relates to viewing aging as less of a social loss and more as an opportunity for ongoing growth (Steuerink et al., 2001).

### **Age as Moderator**

The effectiveness of a knowledge-based lecture on aging may vary depending on participants' age due to differences in self-relevance, prior experience, and defensiveness toward the presented information. For younger adults, aging is still a distant, self-irrelevant concept, which might make the information less threatening and increase their receptiveness and thereby facilitating stereotype change. Intergroup theory further suggests that younger individuals perceive themselves as part of the "young" in-group, which may reduce their motivation to engage with or revise stereotypes about older adults.

For middle-aged adults, the information may feel more challenging as they approach a transition out of the preferred in-group, potentially triggering defensiveness and hindering stereotype change. However, because the information is self-relevant, it may also facilitate an accommodative shift, as middle-aged individuals have a personal interest in updating age-related beliefs to protect positive self-views (Levy, 2009; Kruse & Schmitt, 2006; Kornadt & Rothermund, 2011).

For older adults, lived experiences of aging shape how information affects existing age stereotypes. Information that directly pertains to their own age group is

highly self-relevant and may influence stereotypes differently, potentially reinforcing or modifying beliefs based on prior experiences.

Overall, younger and middle-aged adults may benefit more from the intervention, as realistic depictions of aging could reduce aging anxiety, which has been identified as an antecedent of age stereotypes (Donizzetti, 2019). In contrast, changing age stereotypes in older adults may be more difficult, as discussions of age-related topics such as memory or dementia could activate negative stereotypes. Such activation has been found to impair memory performance in older adults (Bouazzaoui et al., 2015; Hess et al., 2003).

### **Control Variables**

Educational level further influences self-perceptions of aging, with higher-educated individuals reporting fewer perceived losses and more gains, justifying its inclusion as a control variable in analyses (Beyer et al., 2017).

Another relevant factor is chronological age, as previous studies have found partially contradictory associations regarding which age groups tend to endorse more positive or negative age stereotypes and which and how changes through aging are perceived is highly dependent on how old people are (Kornadt & Rothermund, 2011; Martín-Carbonell et al., 2023; De Paula Couto et al., 2022; Donizzetti, 2019; Huang & Rothermund, 2023).

Several studies have shown that adults' health-related experiences, including subjective health, predict self-perceptions of aging (Sargent-Cox et al., 2012; Diehl et al., 2021).

### **Present Study**

The aim of this study is to examine whether an on-site lecture presenting a realistic and evidence-based perspective on aging and older adults reduces aging stereotypes and improves self-perceptions of aging among both younger and older adults immediately after the lecture. Furthermore, the study investigates whether these effects persist over a two-week period. In addition, it examines whether chronological age and educational level moderate the direct change of the intervention.

It is argued that the negative stereotypes of aging and negative self-perceptions of aging are influenced by the negative assumptions about aging and old people that individuals subconsciously accumulate throughout their lives as a result of negative portrayal in the media and books (Ng et al., 2015; Ng, 2021; Levy, 2009).

Loss-oriented as well as gain-oriented self-perceptions of own aging might be improved by knowledge, like demonstrating achievements and the heterogeneity of older people, because they see that there is no such thing as a prototype old person and that they can create the life they want to be living when growing older. The ability to adapt to new information can also be called cognitive flexibility and was found to correlate with self-perceptions of aging (El-Sayed et al., 2024).

Education might moderate the difference between age stereotypes before and after the intervention, with higher educated people benefiting more from the lecture because they have a higher ability to integrate new information and showed higher recall rates when counter stereotypical information was presented (Alexander & Jetton, 2000; Andreoletti & Lachman, 2004).

**H1:** There are differences in **a)** age stereotypes as well as in **b)** gain-oriented and **c)** loss-oriented self-perceptions of aging between the pre-intervention measurement and the post-intervention measurement.

**H2:** There are differences in **a)** age stereotypes as well as in **b)** gain-oriented and **c)** loss-oriented self-perceptions of aging between the pre-intervention measurement and the two-week follow-up measurement.

**H3:** The difference in age stereotypes before and after the intervention is moderated by the **a)** education level **b)** age.

## Methodology

### Participants

146 people attended one of the lectures, but only 143 filled out the first questionnaire. Two people were excluded, because one left during the lecture and the other stated that he did not read the questions, when handing in the questionnaire. This leaves a final convenience sample of  $N = 141$  (70.2% female, 26.2% male, 2.1% diverse and 0.7% preferred not to say, 0.7% missing), aged from 19 to 83 ( $M = 46.46$ ,  $SD = 18.76$ ), with educational level categorised in three groups (17.7% low, 56.0% middle, 23.4% high, 2.8% missing) for the first and second questionnaire. 92 people filled out the third questionnaire at least 14 days and up to 82 days after the lecture. One questionnaire could not be digitized because the responses were unclear for most items. This resulted in a final sample of  $N = 91$ , comprising 74.7% female, 20.9% male, 3.3% diverse, and 1.1% who preferred not to say. Participants ranged in age from 19 to 81 years ( $M = 42.77$ ,  $SD = 18.23$ ). Regarding educational level, 13.2% were classified as low, 53.8% as middle, and 30.8% as high, with 2.2% missing data. All demographics can be seen in **Table 1**.

Since only 64.5% of participants completed the third questionnaire, a binary logistic regression was conducted to examine selective participation. The model was significant  $\chi^2(4) = 29.22$ ,  $p < .001$ , explaining 19.2% (Cox & Snell  $R^2$ ) to 26.5% (Nagelkerke's  $R^2$ ) of the variance. Odds ratios (ORs) greater than 1 indicate increased odds of participation. Participation was more likely among women (OR = 2.47,  $B = 0.904$ ,  $p = .031$ ), participants with higher educational levels (OR = 1.29 per level increase,  $B = 0.255$ ,  $p = .007$ ) and those in a relationship, married, widowed, or divorced had lower odds of participation (OR = 0.55,  $B = -0.601$ ,  $p = .041$ ) compared to singles. Age was not a significant predictor.

Participant recruitment took place in Vienna and more rural areas around Vienna. To inform potential participants about the lecture, posters (**see Appendix 3 & 4**) were hung up at strategical places. For the lecture in Vienna, it was hung up in three buildings of the University of Vienna. It was also posted into different student group chats on WhatsApp and Studo. For all the lectures events were created on Facebook. The event in Vienna was shared in different groups whereas the events in Burgenland were shared by individual people and the public houses where the lecture took place. The flyer for all events was also posted several times on Instagram and WhatsApp Status by me and several of my acquaintances.

For the lectures in Burgenland Posters were hung up or digitally displayed in banks, supermarkets, pharmacies, a doctor's office, cafes, public houses, churches and community centres. The church of on small village also announced it during several ordinations. The owner of the public house in one of the villages also posted the flyer into a senior group, their WhatsApp status and on their Facebook page. Additionally, three lectures took place as part of the course of the Phönix Project, which aims at vocational rehabilitation.

These participants did not register individually for the lecture but were enrolled by the institute and while the data were not collected, the institute's representative reported that many participants had psychological diagnoses. Inclusion criteria for the participants were being 18 years old or older and understanding/speaking German at Level B2 or higher. To ensure anonymity, lectures only took place if ten or more people registered. Due to insufficient registrations (4) in Neusiedl am See, this lecture was cancelled.

Because G\*Power does not directly support linear mixed models, power was conservatively estimated using a dependent t-test, which is justified as each model included only two time points per participant. Based on this approximation, an a priori power analysis with G\*Power (Version 3.1.9.7; Faul et al., 2007) indicated that 54 participants would be required to detect a medium effect ( $d = 0.50$ ) with 95% power at a significance level of  $\alpha = .05$ . The expected effect size was based on previous comparable research (Doncel-García et al., 2022), which reported a partialized eta squared of 0.53, which is a large effect (Cohen, 1988). Because partialized eta squared tends to overestimate explained variance, a conservative medium effect ( $d = 0.50$ ) was used for the calculation. Since the explained variance of partialized eta squared is always overestimated, I calculated conservatively with a medium effect (Lakens, 2013).

### **Procedure**

Data collection took place from 26<sup>th</sup> of June to 2<sup>nd</sup> of October, 2024. All participants provided written informed consent prior to participation. Participation was voluntarily and withdrawal was possible at any time without giving reason and repercussions. Signed declarations were stored as hardcopies in a locked cabinet. Data was anonymized and stored on a password protected u:space cloud, which requires individual log-in to access. Upon completion of the study, all data will be archived for one year. There are no risks or negative influences associated with the study design and process. Participants completed a set of self-report questionnaires before and after the intervention, and at least two weeks after the intervention, assessing age stereotypes, awareness of age-related change, subjective age, aging anxiety, subjective health, as well as additional items administered at selected time

points. Completion of the questionnaire took approximately 10-20 minutes. The full set of questionnaires administered in this study for each measurement time can be seen in **Appendix 5, 6 and 7**.

After submitting the first questionnaire, the intervention began. It consisted of a one-hour lecture covering health, social relationships, and attitudes toward aging, including topics such as positive role models, everyday competence, cognitive skills, dementia, Social Convoy Model, Stereotype Embodiment Theory, and the concept that gains and losses occur throughout the lifespan. Each main topic concluded with a brief call to action. The lecture content was based on peer-reviewed research and informed by the conceptual framework of aging education (McGuire, 2017; Levy, 2022; Wahl, 2017). See **Appendix 8** for the used presentation slides.

At the start of the lecture, participants were asked to write down the first five words that came to mind when thinking about an old person. The most frequently mentioned words were ill/sickness (24 times), aches (14 times), lonely/loneliness (14 times), and experienced/experience (18 times).

## **Design**

This study employed a single-group longitudinal design with three measurement occasions (pre-intervention, post-intervention, and two-week follow-up). Data were analysed using multilevel modelling.

## **Measures**

Refer to **Appendix 9** for an overview of which questions were asked at what time, which answer format and how it was (re)coded.

**Age Stereotypes**

Age stereotypes were assessed with the three subscales physical loss, social loss and ongoing development of the AgeCog scales in German (Dittman-Kohli et al., 1997; Steverink et al., 2001). Each scale consists of 4 items. All items started with “For most people, getting older means ...”. An example of an item in the physical loss dimension would be “... that you aren't able to withstand as much as you used to”, “... that you aren't really needed anymore” is an item in the social loss dimension and “... that you keep making plans” is an example of an ongoing personal growth item. Participants reported each item on a 7-point scale ranging from 1 “Strongly disagree” to 7 “Strongly agree”. A total score was computed by recoding the physical and social loss scales. High values relate to low agreement with negative age stereotypes and high agreement with positive age stereotypes. Internal consistency was good, with Cronbach's  $\alpha$  = .80, .84, and .87 across the three measurement occasions.

**Self-perceptions of Aging / Awareness of Age-Related Change**

Self-perceptions of aging were measured using the German version of the awareness of age-related change short form questionnaire (AARC-10 SF). The AARC-10 SF is a self-evaluation assessment that contains 10 items that differentiates between the five domains: health and physical performance, cognitive performance, interpersonal relations, social-cognitive and social-emotional behaviour, and lifestyle and behaviour in daily life (AARC-10 SF; Kaspar et al., 2019; Brothers et al., 2019). Each domain contains two items, one of which for age-related gains and one for age-related losses. All items start with “With my increasing age, I realize that ...”. An example of an age-related gain item in the domain of health and physical activity would be “I pay more attention to my health”. “I have to limit my activities” is an example of an age-related loss item in the domain of lifestyle and behaviour in daily

life. The answer scale ranges from 1 (strongly disagree) to 7 (strongly agree), with low values representing a weak expression in the respective dimension. Scores were built by adding all AARC-gain items or AARC-loss items respectively and calculating the mean if at least 75% of items were answered. High scores indicate higher AARC-gains or higher AARC-losses respectively.

According to the findings of Kaspar et al. (2023), who tested this scale on participants between 16-93 years old, the AARC-10 SF is a valid instrument across all age groups.

Reliability of the scales was evaluated using Cronbach's alpha ( $\alpha$ ), with values of at least .70 considered acceptable and values below .50 considered unacceptable (Blanz, 2015). The loss-oriented AARC demonstrated acceptable internal consistency, with  $\alpha = .76$ ,  $.82$ , and  $.81$  at pre-, post-, and follow-up assessments, respectively. Cronbach's alpha for gain-oriented AARC was  $.52$ ,  $.68$ , and  $.45$ , with the pre- and post-intervention reliabilities considered marginally acceptable, whereas the follow-up reliability fell below the acceptable threshold. Results involving these covariates should therefore be interpreted with caution.

### ***Sociodemographic Characteristics and Covariates***

At the end of the post-intervention assessment, sociodemographic characteristics like age and education (No school-leaving qualification, still in school, lower secondary education (Hauptschule, NMS), polytechnic school (Polytechnische Schule), apprenticeship without Matura (skilled worker), apprenticeship with Matura, Vocational middle school without Matura (BMS), General or vocational secondary school with Matura (AHS/BHS), University or University of Applied Sciences degree, other), gender (male, female, divers, prefer not to answer).

According to the International Standard Classification of education (ISCED) level of education was recoded into low (ISCED 0-2, which in this case where: No school-leaving qualification and lower secondary schooling) , middle (ISCED 3-5, polytechnic school, apprenticeship with/without Matura, general or vocational secondary school with Matura and high school diploma) and high education (ISCED 6-8, University or University of applied sciences degree) (UNESCO Institute for Statistics, 2012).

Additionally subjective health was assessed asking “How would you rate your current health?” using a 5-point scale, ranging from very poor (1) to very good (5).

### **Data**

An overall age stereotype score was calculated to ensure that all items contributed to the same conceptual direction. Items reflecting negative age stereotypes were reverse coded before computing the scale score. Higher values on this scale indicate more favorable age stereotypes (i.e., higher agreement with positive statements and lower agreement with negative statements), whereas lower values indicate more negative age stereotypes.

Scale scores were calculated as the mean of all available items, provided that at least 67% of the items had valid responses. If this criterion was not met, the scale score was treated as missing and excluded from further analyses. The possible range of the scale was from 1 to 7. Further recoding can be seen in **Appendix 9**.

### **Analytical Approach**

Data were analysed using IBM SPSS Statistics version 30.0.0.0 (IBM Corp., 2024). Given the hierarchical structure of the data, with repeated measurements nested within individuals, multilevel modelling was applied for all hypotheses. To

reflect this nested structure, the dataset was reorganized into long format, with measurement occasions (Level 1) nested within participants (Level 2). Measurements of age stereotypes and self-perceptions of aging across three time points constituted Level 1, nested within participants at Level 2. Although participants were additionally nested within lectures, lecture-level variance was negligible and therefore not modelled further.

For each outcome variable, an unconditional (null) model with a random intercept at the person level was estimated to partition the variance into within- and between-person components and to provide a baseline for subsequent model comparisons. Parameters were estimated using restricted maximum likelihood (REML), and degrees of freedom were calculated using the Satterthwaite approximation. Education was assessed at the person level and included as a moderator in a separate model examining age stereotypes by adding an interaction term between time and education. Education was assessed at the person level and included as a moderator in a separate model examining age stereotypes by adding an interaction term between time and education. Chronological age was additionally included as a Level 2 covariate, and subjective health was entered as a time-varying Level 1 covariate to account for individual differences associated with age stereotypes and self-perceptions of aging.

Based on recommendations by Maas and Hox (2005) for random intercept models (minimum 30–50 Level 2 units) and McNeish and Stapleton (2016) for models including random slopes or cross-level interactions (minimum 80–100 units), the sample size can be considered moderate and sufficient for the planned multilevel analyses.

Time was dummy coded (0 = pre-intervention) to compare pre-intervention measurements with post-intervention measurements (D1) and the two-week follow-up (D2). The non-relevant measurement occasion in each comparison was coded as missing. In models comparing pre-intervention and follow-up, days since intervention (DSI) was included as a covariate to account for variability in the timing of the third questionnaire.

Separate linear mixed-effects models with random intercepts for participants were estimated for age stereotypes, gain-oriented self-perceptions of aging, and loss-oriented self-perceptions of aging. In addition to the primary analysis testing moderation effects on total age stereotypes, exploratory analyses were conducted to examine potential differential moderation effects across the physical, social, and personal subdimensions. These analyses followed the same modelling strategy as described above, including random intercepts for participants, time (D1), education level, and the interaction term between time and education.

For each outcome, several model specifications were tested. Final models were selected based on model fit indices (AIC, BIC, and  $-2$  Log Likelihood), with lower values indicating better model fit. Intraclass correlation coefficients (ICCs) indicated substantial between-person variance across all primary outcome variables, justifying the use of multilevel modelling. Additional model specifications were explored, including contact with older adults and a quadratic age term to test for potential non-linear age effects. However, these terms did not improve model fit and were therefore not retained in the final models. Effects were evaluated at an alpha level of .05 with 95% confidence intervals. Missing data were handled using maximum likelihood estimation.

***Preliminary Analyses and Assumption Checks***

Prior to conducting the main multilevel analysis, a series of assumption checks were performed to determine the suitability of the data and the planned models. Since multiple dependent variables (age stereotypes, as well as gain- and loss-oriented self-perceptions of aging) were analysed across Time 1 vs. Time 2 and Time 1 vs. Time 3, both within-person changes and cross-level moderation effects (by education) were considered, and the assumption checks were applied across all models.

Little's MCAR (missing completely at random) test was conducted across all dependent variables (age stereotypes as well as gain- and loss-oriented self-perceptions of aging) over all three timepoints. The test was not significant  $\chi^2(24) = 27.80, p = 0.27$ , indicating that the data is missing completely at random. This supports the use of maximum likelihood estimation in the multilevel models.

Since time (dummy coded for pairwise comparisons) and education (low, medium, high) were categorical predictors the assumption of linearity was only tested for age, the only continuous predictor used across moderation analyses. To assess the linearity, a centred age variable as well as a centred age squared variable were included in a regression model. The quadratic age term was not significant, indicating that the assumption of linearity is met.

After fitting the final multilevel models for each hypothesis, residuals and random effects were saved and inspected for normality, homoscedasticity and potential outliers. While some Shapiro-Wilk and/or Kolmogorov-Smirnov test were significant, visual inspection of the histograms and Q-Q plots of the residuals indicated approximate normal distributions. Both tests can be overly sensitive with increasing sample size and may flag minor deviations as statistically significant

(Iacobucci et al., 2025; Field, 2018). Skewness and kurtosis values were within commonly accepted thresholds ( $|\text{skewness}| < 1$ ,  $\text{kurtosis} < 7$ ), suggesting no violation of the normality assumption (Kline, 2016; West et al., 1996). Multilevel modelling is also known to be robust against minor deviations from normality (Maas & Hox, 2004).

Homoscedasticity was assessed using scatterplots of residuals against predicted values. Since residuals were approximately evenly distributed with no systematic patterns, the assumption of homoscedasticity was considered met, supporting the validity of the estimated parameters and standard errors.

Finally, boxplots for each model were created to determine potential outliers. One model contained no outliers, another exhibited six moderate and one extreme outlier and all remaining models contained between one and five moderate outliers. Given the relatively small proportion of outliers relative to the total sample, all data points were retained in the final analyses.

## Results

### Descriptives

Descriptive statistics for all primary study variables are presented in **Table 1**. All variables were assessed on a 1–7 scale, with higher scores indicating stronger endorsement of the respective construct.

From pre- to post-intervention, age stereotypes ( $\Delta = 0.63$ ) and gain-oriented AARC ( $\Delta = 0.31$ ) increased descriptively, while loss-oriented AARC decreased ( $\Delta = -0.38$ ). The observed descriptive changes corresponded to the expected direction.

At follow-up, gain-oriented AARC remained stable, loss-oriented AARC remained descriptively below baseline, and age stereotypes were still higher than at pre-intervention. Means are based on available cases at each measurement occasion.

### Correlations

Correlations among study variables across measurement occasions are presented in **Table 2**.

Gain-oriented AARC showed moderate temporal stability across the three measurement occasions ( $r = .49$  to  $.58$ ,  $ps < .01$ ). Age stereotypes likewise demonstrated moderate stability over time ( $r = .44$  to  $.58$ ,  $ps < .01$ ). In contrast, loss-oriented AARC exhibited strong temporal stability, with correlations ranging from  $.62$  to  $.65$  ( $ps < .01$ ).

Loss-oriented AARC was generally negatively associated with age stereotypes, both concurrently and across measurement occasions. Significant negative correlations were observed for multiple combinations ( $r = -.15$  to  $-.40$ ,  $p < .05$ ), indicating that more positive age stereotypes were descriptively related to lower perceived age-related losses.

Educational level was negatively correlated with loss-oriented AARC across time ( $r =$  between  $-.25$  to  $-.32$ ,  $p < .01$ ), meaning higher educated reported lower loss-oriented AARC.

Age was negatively correlated with educational level ( $r = -.28$ ,  $p < .01$ ), indicating that older participants in the sample had, on average, lower levels of education, likely reflecting cohort differences in educational opportunities.

Age was positively correlated with loss-oriented self-perceptions of aging across all three measurement occasions ( $r = .21$  to  $.32$ ,  $ps < .05$ ), indicating that older participants reported higher levels of perceived age-related losses.

Age was negatively correlated with age stereotypes at follow-up ( $r = -.29$ ,  $p < .01$ ), indicating that older participants reported less positive age stereotypes two weeks after the intervention.

**Table 1***Descriptive and Frequency Data*

	<b>N</b>	<b>%</b>	<b>Mean</b>	<b>SD</b>
<b>Self-Perception of Aging<sup>a</sup></b>				
Q1: Loss-oriented AARC	139		3.58	1.26
Q2: Loss-oriented AARC	140		3.20	1.23
Q3: Loss-oriented AARC	90		3.49	1.19
Q1: Gain-oriented AARC	139		5.33	0.83
Q2: Gain-oriented AARC	140		5.64	0.87
Q3: Gain-oriented AARC	90		5.64	0.69
<b>Age Stereotypes<sup>a</sup></b>				
Q1: AgeCog	136		3.87	0.87
Q2: AgeCog	127		4.50	0.88
Q3: AgeCog	87		4.37	0.91
<b>Age</b>	140		46.46	18.80
<b>Gender</b>				
Male	37	26.2%		
Female	99	70.2%		
Diverse	3	2.1%		
Prefer not to say	1	0.7%		
Missing	1	0.7%		
<b>Highest Educational Attainment</b>				
Lowest Education	25	17.7%		
Middle Education	79	56.0%		
Highest Education	33	23.4%		
Missing	4	2.8%		
<b>Partnership Status</b>				
Single	38	27.1%		
In a relationship	30	21.4%		
Married	61	43.6%		
Widowed or Surviving Registered Partner	8	5.7%		
Divorced or Dissolved Registered Partnership	3	2.1%		
<b>Subjective Health<sup>b</sup></b>				
Q1	139		3.61	0.92
Q2	140		3.64	0.94
Q3	89		3.79	0.94
<b>Participants that filled out the 3<sup>rd</sup> Questionnaire</b>	91	65%		

Note. Q1 – Questionnaire 1; Q2 – Questionnaire 2; Q3 – Questionnaire 3;

<sup>a</sup> Likert scale ranging from 1 to 7

<sup>b</sup> Ordinal scale ranging from 1 (very bad) to 5 (very good)

**Table 2***Correlational table*

Variable	Measurement time	M	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Gain-oriented AARC	Pre-intervention	5.33	0.83	1											
2.	Post-intervention	5.64	0.87	.58**	1										
3.	Follow-up	5.64	0.69	.54**	.49**	1									
4. Loss-oriented AARC	Pre-intervention	3.58	1.26	.15	.21*	.05	1								
5.	Post-intervention	3.20	1.23	.12	.12	.02	.62**	1							
6.	Follow-up	3.49	1.19	.04	.10	-.10	.65**	.65**	1						
7. Age Stereotypes	Pre-intervention	3.87	0.87	-.05	-.11	-.07	-.20*	-.14	-.13	1					
8.	Post-intervention	4.50	0.88	.12	.16	.06	.18*	-.40**	-.26*	.44**	1				
9.	Follow-up	4.37	0.91	-.01	0.11	-.03	-.15	-.28**	-.31**	.49**	.58**	1			
10. Educational Level				.13	.58	.11	-.30**	-.25**	-.32**	-.14	.06	.12	1		
11. Subjective Health	Pre-intervention	3.61	0.92	.28**	.23**	.30**	-.25**	-.32**	-.56**	-.10	.11	.16	.19*	1	
12. Age		46.46	18.80	.13	.04	-.04	.32**	.24**	.21*	.14	-.06	-.29**	-.28**	-.01	1

*Note.* AARC – Awareness of age-related change; the follow-up measurement was at least two weeks after the intervention

\*\* Correlation is significant at .01 level (2-tailed)

\* Correlation is significant at .05 level (2-tailed)

## Effects of the Intervention on Age Stereotypes

### ***Change in Age Stereotypes from Pre- to Post-Intervention (H1a)***

A null model was estimated to examine the proportion of variance in age stereotypes attributable to between-person differences. The intraclass correlation coefficient (ICC) was  $\rho = .39$ , indicating that 38.9% of the variance was attributable to differences between individuals, whereas 61.1% reflected within-person variability over time. The estimated variance components, seen in Table 3, support the use of the multilevel modelling.

In the final model, pre–post measurement (D1), education level, and subjective health were entered as fixed effects while retaining a random intercept for participants. Model fit improved substantially compared to the null model. The final model yielded an Akaike Information Criterion (AIC) of 661.39 and a Bayesian Information Criterion (BIC) of 668.53, indicating a markedly better fit.

The marginal  $R^2$  ( $m\_R^2$ ) was .17, suggesting that the fixed effects explained 17% of the variance in total age stereotypes. The conditional  $R^2$  ( $c\_R^2$ ) increased to .55, indicating that 55% of the total variance was explained by the combined fixed and random effects. The variance of the random intercept was 0.33 (SE = 0.07), and the residual variance decreased to 0.40 (SE = 0.05), reflecting a reduction in within-person variance compared to the null model. The hypotheses that a single on site lecture improves age stereotypes is supported  $F(1, 131.93) = 70.77, p < .001$ . Educational level  $F(2, 131.32) = 2.09, p = .127$  and subjective health  $F(4, 192.46) = 2.26, p < .064$  were not significant. Moderate health was associated with more negative age stereotypes compared to those who reported very good health ( $b = -0.46, SE = 0.19, p = .019$ ).

**Table 3***Multi Level Models Predicting Age Stereotypes: Effects of Short- vs. Longer-Term Change*

<b>Model Estimates</b>	<b>Null Model</b>	<b>Short-term Change</b>	<b>Longer-term Change</b>
<b>Fixed Regression Coefficients</b>			
Intercept [SE]	4.23*** [.06]	4.55*** [.18]	4.58*** [.24]
Time [SE]		-0.65*** [.08]	-0.58*** [.01]
Subjective Health			
Very Bad [SE]		1.13 [.77]	0.70 [.58]
Bad [SE]		-0.17 [.23]	0.19 [.30]
Moderate [SE]		-0.46* [.19]	-0.34 [.22]
Good [SE]		-0.29 [.17]	-0.15 [.20]
Very Good (Ref.)			
Education			
Low [SE]		0.12 [.20]	
Middle [SE]		0.30 [.15]	
High (Ref.)			
Days Since Intervention [SE]			-0.004 [.008]
<b>Random Variances</b>			
Intercept Variance [SE]	0.33 [.07]	0.33 [.07]	0.38 [.09]
Residual Variance [SE]	0.53 [.05]	0.40 [.05]	0.39 [.06]
<b>Model Fit</b>			
AIC	955.88	662.72	437.39
BIC	963.70	669.86	443.61
m_R <sup>2</sup>		0.17	0.13
c_R <sup>2</sup>	0.39	0.55	0.56

Note. R<sup>2</sup><sub>m</sub> = marginal R<sup>2</sup>, R<sup>2</sup><sub>c</sub> = conditional R<sup>2</sup>, SE = Standard Error

Reference categories: Very Good = Subjective Health, High = Education, 0 = Time

(Pre). Estimates reflect differences relative to reference categories.

\*p < .05, \*\*p < .01, \*\*\*p < .001.

***Change in Age Stereotypes from Pre-Intervention to Follow-up (H2a)***

The final model included D2, DSI and Subjective Health and showed that changes in age stereotypes through the lecture persisted over the time of 2 weeks, because the effect of time remained statistically significant,  $F(1, 93.65) = 34.97, p < .001$ . Neither DSI,  $F(1, 93.66) = 0.11, p = .738$ , nor Subjective Health  $F(4, 166.00) = 1.95, p < .105$  were significant predictors. The model explained 12.9% of the variance through fixed effects and 56.1% of the total variance when including random effects. Further information can be found in **Table 3**.

***Moderation of Intervention Effects on Age Stereotypes by Education Level (H3a)***

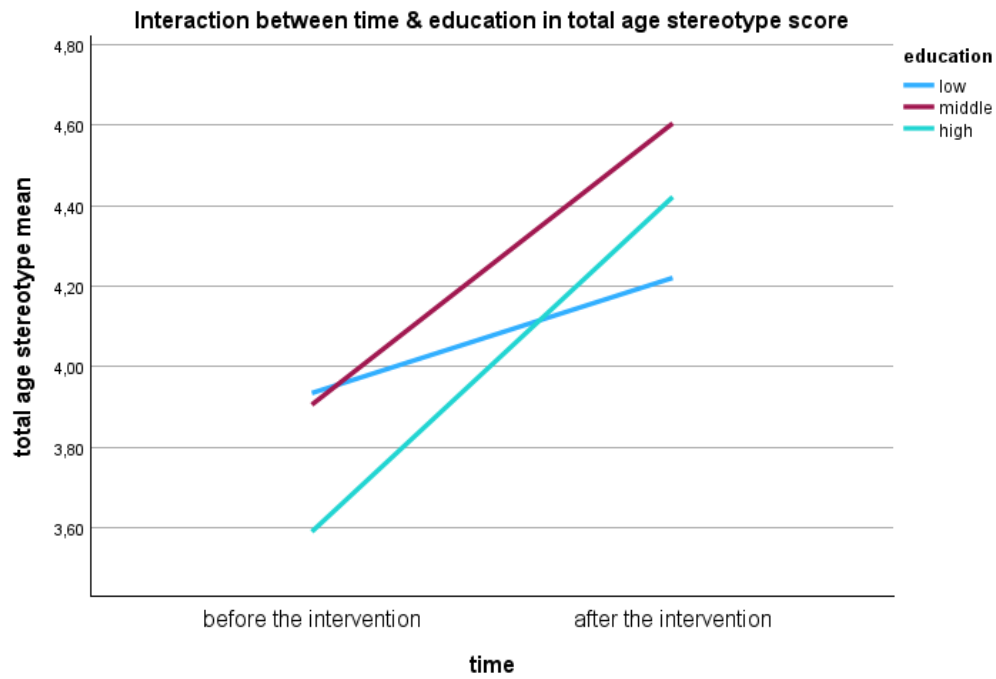
The hypothesis that education moderates' changes in total age stereotypes is supported, because the interaction between time and educational level was significant  $F(2, 130.63) = 3.33, p = .039$ . Specifically, participants with low education showed a significantly smaller decrease in negative age stereotypes compared to the high education reference group ( $b = 0.60, SE = 0.24, p = .013$ ). The interaction effect for middle education was not significant ( $b = 0.17, SE = 0.18, p = .351$ ).

The final model also contained a dummy variable for time that was significant  $F(1, 130.73) = 48.30, p < .001$ , indicating decreases in age stereotypes from pre- to post-measurement ( $b = -0.86, SE = 0.15, p < .001$ ). No significant main effects were found for education  $F(2, 131.24) = 2.11, p = .125$  and subjective health  $F(4, 192.35) = 2.41, p = .051$ .

Differences in the effectiveness of the intervention across educational levels are illustrated in **Figure 1**, whereas the results of the multilevel model are reported in **Table 4**.

**Figure 1**

*Changes between Before and After the Lecture in Age Stereotypes per Education*



Note: the interaction is significant at  $p = 0.039$ )

**Table 4***Multi Level Models Predicting Age Stereotypes: Moderation by Education and Age*

<b>Model Estimates</b>	<b>Null Model</b>	<b>Education Interaction</b>	<b>Age Interaction</b>
<b>Fixed Regression Coefficients</b>			
Intercept [SE]	4.23*** [.06]	4.67*** [.19]	4.59*** [.18]
Time [SE]		-0.86*** [.15]	-0.65*** [.08]
D1 × Education			
Pre × Low		0.60* [.24]	
Pre × Middle		0.17 [.18]	
D1 × Age			
Pre × Age			0.008 [.004]
Post × Age			0.000 [.004]
Subjective Health			
Very Bad [SE]		1.12 [.76]	1.05 [.77]
Bad [SE]		-0.19 [.23]	-0.16 [.22]
Moderate [SE]		-0.48* [.19]	-0.47* [.20]
Good [SE]		-0.31 [.17]	-0.30 [.08]
Very Good (Ref.)			
Education			
Low [SE]		-0.16 [.23]	0.05 [.21]
Middle [SE]		0.22 [.18]	0.28 [.15]
High (Ref.)			
<b>Random Variances</b>			
Intercept Variance [SE]	0.33 [.07]	0.34 [.07]	
Residual Variance [SE]	0.53 [.05]	0.38 [.05]	
<b>Model Fit</b>			
AIC	955.88	659.08	676.87
BIC	963.70	666.21	684.00
m_R <sup>2</sup>		.18	.18
c_R <sup>2</sup>	.39	.57	.55

Note. R<sup>2</sup><sub>m</sub> = marginal R<sup>2</sup>, R<sup>2</sup><sub>c</sub> = conditional R<sup>2</sup>, SE = Standard Error

Reference categories: Very Good = Subjective Health, High = Education, 0 = Time

(Pre). Estimates reflect differences relative to reference categories.

\*p < .05, \*\*p < .01, \*\*\*p < .001.

***Moderation of Intervention Effects on Age Stereotypes by Age (H3b)***

Contrary to expectations, the interaction between time and age was not statistically significant,  $F(1, 131.97) = 3.16, p = .078$ . Although the coefficient suggested a small positive trend ( $b = 0.008, SE = 0.004, p = .064$ ), the effect did not reach conventional levels of significance. Thus, Hypothesis 3b, which assumed that age moderates changes in age stereotypes, was not supported.

The final model contained a significant main effect of time  $F(1, 131.03) = 71.48, p < .001$  and insignificant effects of education  $F(2, 130.84) = 2.05, p = .133$ , age  $F(1, 131.52) = 1.24, p = .268$ , and subjective health  $F(4, 191.53) = 2.20, p < .071$ . Participants reporting moderate health exhibited lower age stereotype scores compared to those reporting very good health ( $b = -0.47, SE = 0.20, p = .017$ ).

**Effects of the Intervention on Self-Perceptions of Aging*****Change in Gain-oriented AARC from Pre- to Post-Intervention (H1b)***

A null model with a random intercept for participants indicated substantial between-person variability in gain-oriented AARC ( $ICC = .54$ ), with 54.2% of the variance attributable to between-person differences, while 46% reflected within-person variation over time. This substantial clustering justified the use of multilevel modelling. Model estimates of the null model are presented in **Table 5**.

Supporting H1b, gain-oriented AARC significantly changed through the educational intervention  $F(1, 132.14) = 20.69, p < .001$ . Scores increased by approximately 0.30 units at post-test compared to baseline. Additionally, subjective health had a significant effect on age stereotypes  $F(1, 197.91) = 2.86, p = .024$ .

Compared to participants reporting very good health, those reporting bad health ( $b = -0.52, SE = 0.22, p = .016$ ) and moderate health ( $b = -0.54, SE = 0.19, p =$

.005) reported significantly lower gain-oriented AARC scores. Educational level did not significantly predict gain-oriented AARC  $F(2, 132.50) = 0.56, p = .571$ .

**Table 5***Multi-Level Models Predicting Gain-oriented AARC*

<b>Model Estimates</b>	<b>Null Model</b>	<b>Short-term Change</b>	<b>Longer-term Change</b>
<b>Fixed Regression Coefficients</b>			
Intercept [SE]	5.50*** [.06]	6.10*** [.17]	5.99*** [.22]
Time [SE]		-0.30*** [.07]	-0.29*** [.08]
Subjective Health			
Very Bad [SE]		-1.10 [.68]	-2.06*** [.45]
Bad [SE]		-0.52* [.22]	-0.53* [.24]
Moderate [SE]		-0.54** [.19]	-0.38* [.18]
Good [SE]		-0.29 [.16]	-0.36* [.16]
Very Good (Ref.)			
Education			
Low [SE]		-0.08 [.19]	0.05 [.23]
Middle [SE]		-0.16 [.15]	-0.18 [.15]
High (Ref.)			
Days Since Intervention [SE]			0.005 [.006]
<b>Random Variances</b>			
Intercept Variance [SE]	0.38 [.06]	0.36 [.07]	0.28 [.07]
Residual Variance [SE]	0.32 [.03]	0.29 [.04]	0.22 [.04]
<b>Model Fit</b>			
AIC	831.06	614.62	350.93
BIC	838.88	621.75	357.08
m_R <sup>2</sup>		0.09	0.17
c_R <sup>2</sup>	0.54	0.59	0.64

Note. R<sup>2</sup>\_m = marginal R<sup>2</sup>, R<sup>2</sup>\_c = conditional R<sup>2</sup>, SE = Standard Error

Reference categories: Very Good = Subjective Health, High = Education, 0 = Time (Pre). Estimates reflect differences relative to reference categories.

\*p < .05, \*\*p < .01, \*\*\*p < .001.

***Change in Gain-oriented AARC from Pre-Intervention to Follow-up (H2b)***

Consistent with the earlier analysis comparing baseline and follow-up, gain-oriented AARC significantly increased from baseline to follow-up  $F(1, 80.26) = 14.76, p < .001$ , which supports H2b. The increase in gain-oriented AARC observed from baseline to follow-up ( $b = -0.30, SE = 0.07, p < .001$ ), was maintained at follow-up ( $b = -0.29, SE = 0.08, p < .001$ ), indicating that the intervention-induced increases in gain-oriented AARC remained stable over time. Subjective health  $F(4, 154.67) = 5.75, p < .001$ , significantly predicted gain-oriented AARC at the follow-up measurement. Compared to participants reporting very good health (reference group), lower levels of subjective health were associated with lower gain-oriented AARC scores, as shown in **Table 5**, indicating that participants with lower subjective health reported less gain-oriented AARC scores. Neither education  $F(2, 80.43) = .95, p = .390$  nor DSI  $F(1, 76.932) = .69, p = .408$  had significant effects on gain-oriented AARC.

***Change in Loss-oriented AARC from Pre- to Post-Intervention (H1c)***

The intraclass correlation coefficient (ICC) was  $\rho = 0.61$ , indicating that 61.2% of the total variance in loss-oriented AARC was attributable to stable differences between individuals, whereas 38.8% reflected within-person fluctuations over time.

In support of the hypothesis (H1c) loss oriented AARC significantly changed between pre- and post-measurement,  $F(1, 138.53) = 13.87, p < .001$ . Subjective health also significantly predicted loss-oriented AARC  $F(4, 210.32) = 4.82, p < .001$ .

Compared to the reference group, several categories were associated with higher loss-oriented AARC scores (see **Table 6**), suggesting that poorer subjective health was related to stronger perceptions of age-related losses. Another significant predictor was educational level  $F(2, 145.22) = 5.28, p = .006$ . Participants in the lowest education category reported higher loss-oriented AARC scores compared to the reference group ( $b = 0.85, SE = 0.27, p < .002$ ), whereas the intermediate education group did not significantly differ from the highest educated group.

***Change in Loss-oriented AARC from Pre-Intervention to Follow-up (H2c)***

Rejecting H2c, loss-oriented AARC did not significantly differ between baseline and follow-up  $F(1, 81.21) = 0.12, p = .731$ , indicating that changes in loss-oriented AARC do not persist over 2 weeks.

In contrast, subjective health significantly predicted loss-oriented AARC,  $F(4, 156.10) = 3.01, p = .020$ . Compared to the reference group (very good health), several lower health categories were associated with higher loss-oriented AARC scores (see **Table 6**), suggesting that poorer subjective health was related to stronger perceptions of age-related losses. Educational level also significantly predicted loss-oriented AARC,  $F(2, 80.80) = 4.55, p = .013$ . Participants in the lowest educational category reported higher loss-oriented AARC scores compared to the reference group ( $b = 1.05,$

$SE = 0.35, p < .003$ ), whereas the intermediate education group did not significantly differ from the reference category. DSI was not a significant predictor of loss-oriented AARC,  $F(1, 76.98) = 1.73, p = .192$ .

**Table 6***Multi-Level Models Predicting Loss-oriented AARC*

<b>Model Estimates</b>	<b>Null Model</b>	<b>Short-term Change</b>	<b>Longer-term Change</b>
<b>Fixed Regression Coefficients</b>			
Intercept [SE]	3.42*** [.09]	2.27*** [.24]	2.35*** [.33]
Time [SE]		0.36*** [.10]	-0.04 [.12]
Subjective Health			
Very Bad [SE]		0.83 [.98]	1.03 [.70]
Bad [SE]		0.97** [.30]	0.99** [.36]
Moderate [SE]		1.09*** [.26]	0.90** [.28]
Good [SE]		0.57* [.23]	0.56* [.24]
Very Good (Ref.)			
Education			
Low [SE]		0.85** [.27]	1.05** [.35]
Middle [SE]		0.24 [.21]	0.29 [.23]
High (Ref.)			
Days Since Intervention [SE]			0.012 [.009]
<b>Random Variances</b>			
Intercept Variance [SE]	0.96 [.14]	0.67 [.12]	0.58 [.15]
Residual Variance [SE]	0.61 [.06]	0.62 [.08]	0.56 [.09]
<b>Model Fit</b>			
AIC	1097.07	799.68	489.48
BIC	1104.89	806.81	495.63
m_R <sup>2</sup>		0.17	0.17
c_R <sup>2</sup>	0.61	0.60	0.59

Note. R<sup>2</sup><sub>m</sub> = marginal R<sup>2</sup>, R<sup>2</sup><sub>c</sub> = conditional R<sup>2</sup>, SE = Standard Error

Reference categories: Very Good = Subjective Health, High = Education, 0 = Time

(Pre). Estimates reflect differences relative to reference categories.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

## Explorative Analyses

### ***Moderation of Intervention Effects on Age Stereotypes by Education Level (H3)***

Exploratory analyses were conducted to examine whether potential moderation effects might differ across the specific subdimensions of age stereotypes (physical, social, and personal). Given that total age stereotypes represent an aggregated score, it is possible that differential patterns across subdomains may be obscured when combined into a single composite measure. Therefore, separate moderation analyses were performed for each subscore.

***Physical Age Stereotypes.*** The main effect of time was significant,  $F(1, 134.00) = 33.47, p < .001$ , indicating a change from pre- to post-measurement.

The main effect of education was significant,  $F(2, 134.00) = 3.72, p = .027$ , suggesting baseline differences between educational groups.

However, the interaction between time and education was not significant,  $F(2, 134.00) = 0.67, p = .516$ , indicating that the rate of change did not differ by educational level.

***Social Age Stereotypes.*** The main effect of time was significant,  $F(1, 140.08) = 14.71, p < .001$ . Neither the main effect of education,  $F(2, 140.45) = 1.49, p = .229$ , nor the interaction between time and education,  $F(2, 139.92) = 1.16, p = .318$ , was statistically significant. Thus, changes in social age stereotypes did not vary across educational levels.

***Personal Age Stereotypes.*** The main effect of time was significant,  $F(1, 133.00) = 27.85, p < .001$ . The main effect of education was not significant,  $F(2, 133.41) = 0.00, p = 1.00$ . Importantly, the interaction between time and education

was statistically significant,  $F(2, 132.85) = 5.49, p = .005$ , indicating that changes over time differed by educational level.

Post hoc comparisons based on estimated marginal means revealed that significant improvements from pre- to post-measurement were observed among participants with medium ( $\Delta = 0.78, p < .001$ ) and high education ( $\Delta = 0.97, p < .001$ ), whereas no significant change was found among participants with low education ( $\Delta = 0.01, p = .970$ ).

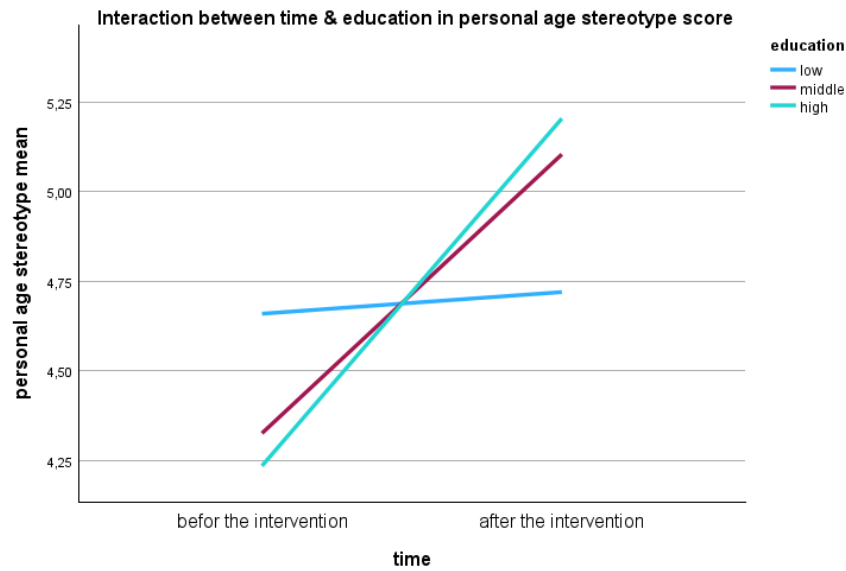
**Table 7**

*Pairwise Comparisons – Age Stereotype Change from Time 1 to Time 2 per Education*

<b>Outcome Variable</b>	<b>Education Group</b>	<b>Time 1 Mean</b>	<b>Time 2 Mean</b>	<b>Mean Difference (T1-T2)</b>	<b>p-value</b>
Physical AgeCog	Low (0)	4.910	4.410	-0.500	.050
	Medium (1)	4.991	4.272	-0.718	< .001
	High (2)	5.583	4.697	-0.886	< .001
Social AgeCog	Low (0)	3.819	3.640	-0.179	.489
	Medium (1)	3.617	3.019	-0.598	< .001
	High (2)	3.879	3.242	-0.636	.005
Personal AgeCog	Low (0)	4.711	4.720	+0.009	.970
	Medium (1)	4.326	5.104	+0.778	< .001
	High (2)	4.235	5.205	+0.970	< .001

**Figure 4**

*Changes between Before and After the Lecture in Personal Age Stereotypes per Education*



Note: the interaction was significant ( $p = 0.005$ )

### **Discussion**

This study wanted to elaborate on the effectiveness of an on-time on site lecture to foster gain-oriented and reduce loss-oriented age stereotypes as well as self-perceptions of aging. As hypothesized, the results indicated that both age stereotypes and gain- and loss-oriented AARC can be improved through the presentation of evidence-based information about aging and older adults within a lecture format. With regard to the stability of these changes over a two-week period, improvements in gain-oriented AARC remained stable, and positive changes in age stereotypes were likewise maintained. However, after two weeks, loss-oriented AARC no longer differed significantly from baseline levels, suggesting that reductions in perceived age-related losses were not sustained over time.

Additional and in line with the hypotheses educational level was found to moderate the effectiveness of the lecture, while age on the contrary did not.

### **Knowledge Improved Age Stereotypes**

The results showed that even a one-time one site lecture is enough for participants to adapt their age stereotypes and self-perceptions of aging. By providing accurate information about aging and older adults and presenting counter-stereotypical examples participants were offered the opportunity to reflect and revise their assumptions. The insight that knowledge on aging and older adults can effectively change age stereotypes and self-perceptions of aging is already widely known through studies on educational interventions, but as far as I know this is the first study that showed that a low effort, low barrier intervention that just imparts knowledge without adding additional elements in one single-hour on-site lecture is effective for adults of all ages up to 83 (Donizzetti, 2019; Chonody, 2015; Knight et al., 2021; Burnes et al., 2019; Bétrisey et al., 2023; Doncel-García et al., 2022).

### **Differences in Stability of Self-Perceptive Changes**

Consistent with the theoretical framework of the SET, which proposes that individuals internalize beliefs about aging throughout their life and later apply these onto themselves, this intervention not only improved age stereotypes but also self-perceptions of aging (Levy, 2009). Although the present study did not test whether changes in age stereotypes preceded changes in self-perceptions, presenting a realistic image of aging appeared sufficient to shift both overall and personal views. This aligns with Brothers et al. (2021), who found that self-perceptions of aging mediate the relationship between age stereotypes and physical as well as mental health outcomes. Psychological resources such as perceived control and multiple calls to action may have contributed to the observed effects. By providing participants with concrete strategies to enhance their physical and mental health, social relationships, and attitudes toward aging, the lecture may have reduced feelings of helplessness and increased a sense of control, reinforcing the perception that aging is, at least in part, within one's own hands. This enhanced sense of agency may have led to more positive self-perceptions of aging (Sargent-Cox et al., 2012).

Unexpectedly, changes in gain- and loss-oriented self-perceptions of aging immediately after the lecture only remained stable for gain-oriented perceptions, whereas loss-oriented perceptions returned toward baseline after two weeks. This differential persistence suggests that distinct psychological mechanisms may underlie changes in gain- versus loss-oriented self-perceptions. One possibility is that gain-oriented self-perceptions increased due to a greater sense of personal control, which makes them easier to integrate into the self-concept and thus more durable. In contrast, decreases in loss-oriented self-perceptions may have been driven by

immediate affective responses, such as increased positive affect and decreased negative affect following the lecture, which are typically less stable over time (Sargent-Cox et al., 2012; Diehl et al., 2021).

Another interesting study to discuss this topic is by MacNeil (2025) who found a growth mindset associated with more loss-oriented self-perceptions of aging. Since this intervention closed with a section on the life span development theory by Baltes (1987), it is possible that the lecture promoted a growth mindset with non-essentialist beliefs in the participants. Growth mindset by Dweck (2006) means that we can develop our abilities through learning and putting in effort. If we allocate this onto aging it means that aging is a lifelong process where we grow with the gains and losses that come with aging. MacNeil (2025) unfortunately did not assess gain-oriented and loss-oriented self-perceptions separately, but I could imagine that there might also be a difference in the association between gain-oriented and loss-oriented self-perceptions of aging. Studies have found a growth mindset to also have a “dark side” (Ryazanov & Christenfeld, 2018; Hooper et al., 2018). Maybe participants encountered age-related changes in the days after the interventions and interpreted these as personal shortcomings. An example could be that a participant could have experienced back pain in the days after the intervention. This was my example to start the intervention, where I explained that many people tend to argue that their back pain naturally comes with aging and neglect other explanations like reduced movement or strength training. So instead of passively accepting that backpain now is part of their life, they could go to the doctor to medically assess it, disrupt long periods of sitting and start strengthening relevant muscles. Maybe the intervention raised their standards unrealistically high for how they want to age while at the same time

encountering situations where they feel that they did not do enough. This then could lead to distress, disappointment and more loss-oriented self-perceptions of aging.

This is essentially what the self-discrepancy theory states that happens when there is a gap between the actual self and the ideal self (Higgins, 1987; MacNeil 2025; Ryazanov & Christenfeld, 2018; Hooper et al., 2018).

Gain-oriented self-perceptions, in contrast, may have been easier for participants to imagine, as the lecture raised awareness of potential future gains that participants had not previously considered, making these changes more enduring.

Methodological factors may also have influenced these effects. Completing the questionnaire immediately before the lecture may have introduced stereotype threat or social desirability effects, such that participants' responses reflected immediate reactions rather than long-term beliefs (Steele et al., 2002). Finally, due to cognitive dissonance, reinforcement may be necessary to maintain changes in both gain- and loss-oriented self-perceptions over the long term (Festinger, 1957).

### **Differences According to Educational Level**

Regarding the changes through the lecture, the results showed differences in the effectiveness of the lecture depending on the educational level, with higher educated people profiting most. This is in line with studies that argue that higher educated are cognitively more flexible and can absorb, process and comprehend knowledge better (Alexander & Jetton, 2000). The increased effectiveness for higher educated people might also come from having more experience in absorbing knowledge from lectures, because not only has their education duration been longer, but they also tend to attend more further education programs (Henning, et al. 2025).

One explanation for these attending differences can be found in differences in the

readiness to further develop themselves (Henning, et al., 2025). Maybe this different readiness also explains, why the intervention did not change the personal development age stereotypes in lower educated. But the lower readiness also must be considered in context, because lower educated individuals also face higher barriers to further education. Barriers include time constraints, money concerns and dispositional barriers. Dispositional barriers contain lacking self-confidence, prior negative learning experiences or attitudes about self and the benefits about learning and are much more common in less educated as well as older people (Cross, 1981; Desjardins et al., 2006). So, while the dispositional barriers might explain why the lecture was less effective, another reason could be that lack of occupational advancement creates more stress in higher educated compared to lower educated (Schoger, 2023).

### **Differences According to Age**

Age seemed to play a nuanced role in how participants responded to the lecture. While older participants started with a slight, non-significant tendency toward better age stereotype scores, younger participants showed a non-significant tendency for greater effectiveness in changing age stereotypes. Stronger effects of educational interventions on younger adults were also reported in a systematic review and meta-analysis by Burnes et al. (2019).

The tendency for higher effectiveness in younger participants may be explained by lifespan development theory and the SET, both of which suggest that older adults have more stable and resistant stereotypes, having had more time to consolidate their beliefs about aging (Baltes et al., 2006; Levy, 2009; Kornadt et al., 2020). Better age stereotypes in older individuals before the intervention align with

development and projection theories, which argue that when people experience their own aging as better than expected, their age stereotypes become more positive (Kornadt et al., 2017). Since older participants started with more positive age stereotypes, the intervention may have had less room for improvement, potentially leading to ceiling effects.

It is worth noting that in exploratory analyses not reported in the main results, the interaction between age and intervention effect became significant when subjective health and education were not controlled for. However, for transparency and model parsimony, only the model with the best fit is reported here. This suggests that age effects may be partly influenced by participants' health and educational background, highlighting the importance of considering these covariates in future research.

### **Limitations**

Regarding the strengths of this work, this educational intervention has several methodical characteristics that are rare in the literature, such as delivering the knowledge in a single-session, local on-site presentation in Austria, accessible to adults across the entire age spectrum.

At the same time, several limitations must be acknowledged. The study did not include a control group, and relevant socioeconomic and health information was not collected, which limits the ability to draw causal conclusions. The sample was not representative, because most participants were recruited through personal contacts or the Phönix Institute, with underrepresentation of men, ethnic diversity, and urban residents such as those from Vienna. Participation was voluntary (except for the

Phönix group), which may have led to a self-selection of individuals more receptive to the intervention, limiting generalizability.

Other methodological considerations include potential effects of completing the questionnaire immediately before the lecture, which could have influenced responses via social desirability or stereotype threat. Self-report measures may not reflect actual behavioural changes, and the lecturer's age might have shaped how participants perceived the intervention differently across age groups. Follow-up was limited to two weeks, so the sustainability of the effects remains unclear, and reinforcement may be necessary for long-term change. Since the intervention did not include all facts on aging, the selection of topics probably influenced effects (Levy & Leifheit-Limson, 2009b).

Another limitation containing everything connected to educational level, is my own educational level, because since I conducted this research to attain my master's degree, I already achieved high educational attainment, so my view on this topic might be biased through that point of view. I tried to change perspective, but since most research is done by people with a high educational level interpretations and conclusions from people with low educational attainments are missing out.

The internal consistency of the gain-oriented AARC scale was lower than expected (Cronbach's  $\alpha$  = between 0.52 and 0.45), which limits confidence in interpreting these results. This lower reliability may reflect sample-specific factors, as participants from the Phönix Institute were currently unemployed through vocational rehabilitation, and many lived in rural areas with limited infrastructure. For these individuals, items such as 'As I get older, I have more freedom to live my day as I want' may not have reflected positive aging-related gains in the same way as in more

advantaged populations. These contextual factors likely contributed to the lower internal consistency and should be considered when interpreting the findings.

### **Further Studies**

Future research could explore why higher-educated participants in this study reported stronger negative physical age stereotypes and examine how age stereotypes emerge differently across groups with varying life experiences. Differences between rural and urban environments and their influence on age stereotypes and self-perceptions remain understudied; most existing research focuses on East-West comparisons in Germany or cross-country differences, but evidence from Austria is lacking. It would also be valuable to investigate how different domains of age stereotypes vary between groups, how they originate, how changeable they are, and whether they independently influence other outcomes.

Mechanisms underlying the effects of educational interventions on age stereotypes and self-perceptions of aging should be further explored. Possible mediators include enhanced self-efficacy, perceived (executive) control, mindfulness, empathy, reduced aging anxiety, automatization, or stress regulation (Han & Kim, 2010; Mendoza-Núñez et al., 2018; Sargent-Cox et al., 2012; Allan & Johnson, 2008; Donizzetti, 2019; Lueke & Gibson, 2015; Ingold & Lueke, 2022; Sánchez et al., 2025; Djikic et al., 2008; Keinan et al., 2000; Payne, 2005; Nuevo et al., 2009).

Another avenue for future research could examine whether educational interventions unintentionally induce empathy and whether this contributes to changes in age stereotypes. For instance, Sánchez et al. (2025) found that a knowledge- and empathy-based intervention reduced negative age stereotypes in nursing students, suggesting that fostering empathy can play a key role in changing

attitudes. In the present study, when explaining the Socioemotional Selectivity Theory (SET; Levy, 2009), examples highlighted the perspectives, thoughts, and emotions of both younger and older adults. Investigating whether such perspective-taking elements enhance empathy, and in turn positively influence age stereotypes and self-perceptions of aging, could help clarify the mechanisms underlying educational interventions. Future studies could experimentally manipulate empathy-inducing components to determine their specific impact and optimize intervention design.

Investigating whether such perspective-taking elements enhance empathy and, in turn, positively influence age stereotypes and self-perceptions of aging could help clarify the mechanisms underlying educational interventions. Future studies could experimentally manipulate empathy-inducing components to determine their specific impact and optimize intervention design.

Future interventions should clearly state the presented facts and key messages to enhance transparency and deepen understanding of what works for whom. Research should actively involve marginalized groups to determine their specific needs. For example, it would be useful to investigate what type of interventions work for lower-educated participants. Interventions could become more practice-oriented, allowing participants to observe, experience, and imitate alternative approaches to age-related situations, including expectations, behaviors, and interpretations.

In addition, future studies could examine how structural disadvantages contribute to aging-related inequalities, such as increased loneliness among lower-educated or marginalized groups. Community-based projects could be evaluated for their potential to reduce these structural inequalities, addressing collective rather

than sole individual responsibility. Finally, follow-up assessments could measure whether improvements in age stereotypes translate into concrete changes in social or physical activities following the intervention.

### **Implications**

This study highlights the importance of including the perspectives of the people we research when designing educational interventions. Engaging participants beforehand could improve the relevance and quality of the content, ensuring that lectures address topics that are meaningful and applicable to their daily lives. For example, at the Phönix Institute, discussing how study findings translate to people with psychological diagnoses or other forms of structural disadvantage could make the intervention more impactful and personally relevant.

While the lecture improved age stereotypes and perceptions of aging immediately afterward, it did not address structural challenges that marginalized groups face, such as increased loneliness, limited access to resources, or systemic discrimination. This points to the need for interventions that not only target individual perceptions but also consider broader societal and structural factors to reduce aging-related disadvantages on a collective level.

Moreover, the design of future interventions should aim for sustainability by incorporating follow-ups or reinforcement activities to maintain long-term effects. Multiperspective approaches such as including diverse facilitators and considering differences in age, educational background, and living environment can further enhance the inclusiveness and effectiveness of such programs. Overall, these insights emphasize that educational interventions must be co-created with participants, contextually

adapted, and sensitive to structural inequalities to achieve meaningful and lasting impact.

### **Conclusion**

This study demonstrates that even a brief, single-session evidence-based lecture can positively influence age stereotypes and self-perceptions of aging across adulthood. The findings suggest that knowledge alone, without repeated training or structured contact interventions, has the potential to initiate short-term changes in how individuals view aging, both in general and in relation to themselves.

Yet the differential stability of gain- and loss-oriented perceptions suggests that changing how people imagine aging gains may be easier than altering deeply rooted beliefs about aging-related losses. Sustainable change of loss-oriented self-perceptions of aging likely requires more than knowledge alone to achieve lasting change.

At the same time, the moderating role of educational level indicates that the effectiveness of knowledge-based interventions is not uniform across social groups. Educational formats may be more easily integrated by individuals with greater structural and cognitive resources, raising important questions about accessibility and equity.

Overall, the present findings underline the potential of low-threshold educational approaches to challenge age-related stereotypes. However, sustainable change in views of aging will likely require not only individual-level knowledge transfer but also sensitivity to structural conditions that shape how aging is experienced across different segments of society.

### References

- Alexander, P. A., & Jetton, T. L. (2000). Learning from text: A multidimensional and developmental perspective. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 285-310). Lawrence Erlbaum Associates Publishers.
- Allan, L. J., & Johnson, J. A. (2008). Undergraduate Attitudes Toward the Elderly: The Role of Knowledge, Contact and Aging Anxiety. *Educational Gerontology*, 35(1), 1-14. <https://doi.org/10.1080/03601270802299780>
- Allport, G. W. (1954). *The nature of prejudice*. Addison-Wesley.
- Anderson, M., & Perrin, A. (2017). Technology use among seniors. *Pew Research Center for Internet & Technology*.
- Andreoletti, C., & Lachman, M. (2004). Susceptibility and Resilience to Memory Aging Stereotypes: Education Matters More than Age. *Experimental Aging Research*, 30(2), 129-148. <https://doi.org/10.1080/03610730490274167>
- Baltes, P. B. (1987). Theoretical propositions of life-span developmental psychology: On the dynamics between growth and decline. *Developmental Psychology*, 23(5), 611-626. <https://doi.org/10.1037/0012-1649.23.5.611>
- Baltes, P. B., Lindenberger, U., & Staudinger, U. M. (2006). Life span theory in developmental psychology. In R. M. Lerner & W. Damon (Eds.), *Handbook of child psychology: Theoretical models of human development* (6th ed., pp. 569-664). John Wiley & Sons, Inc.

Barber, S. J., Mather, M., & Gatz, M. (2015). How Stereotype Threat Affects Healthy Older Adults' Performance on Clinical Assessments of Cognitive Decline: The Key Role of Regulatory Fit. *The journals of gerontology. Series B, Psychological sciences and social sciences*, 70(6), 891-900.  
<https://doi.org/10.1093/geronb/gbv009>

Bétrisey, C., Carrier, A., Cardinal, J.-F., Lagacé, M., Cohen, A. A., Beaulieu, M., Baillargeon, D., & Levasseur, M. (2023). Which interventions with youths counter ageism toward older adults? Results from a realist review. *Gerontology & Geriatrics Education*, 45(2), 323-344.  
<https://doi.org/10.1080/02701960.2023.2210521>

Beyer, A.-K., Wurm, S., & Wolff, J. K. (2017). Älter werden—Gewinn oder Verlust? Individuelle Altersbilder und Altersdiskriminierung [Aging—Gain or loss? Individual views of aging and age discrimination]. In K. Mahne, J. K. Wolff, J. Simonson, & C. Tesch-Römer (Eds.), *Altern im Wandel: Zwei Jahrzehnte Deutscher Alterssurvey (DEAS)* (pp. 329–343). Springer VS.  
[https://doi.org/10.1007/978-3-658-12502-8\\_22](https://doi.org/10.1007/978-3-658-12502-8_22)

Blanz, M. (2015). *Forschungsmethoden und Statistik für die Soziale Arbeit: Grundlagen und Anwendungen* [Research methods and statistics for social work: Basics and applications] (1st ed.). Kohlhammer.

Bouazzaoui, B., Follenfant, A., Ric, F., Fay, S., Croizet, J.-C., Atzeni, T., & Tacconnat, L. (2015). Ageing-related stereotypes in memory: When the beliefs come true. *Memory*, 24(5), 659-668. <https://doi.org/10.1080/09658211.2015.1040802>

Brothers, A., Gabrian, M., Wahl, H.-W., & Diehl, M. (2019). A new multidimensional questionnaire to assess awareness of age-related change (AARC). *The Gerontologist*, 59(3), e141-e151. <https://doi.org/10.1093/geront/gny006>

Brothers, A., Kornadt, A. E., Nehr Korn-Bailey, A., Wahl, H. W., & Diehl, M. (2021). The Effects of Age Stereotypes on Physical and Mental Health Are Mediated by Self-perceptions of Aging. *The journals of gerontology. Series B, Psychological sciences and social sciences*, 76(5), 845-857. <https://doi.org/10.1093/geronb/gbaa176>

Burnes, D., Sheppard, C., Henderson, C., Wassel, M., Cope, R., Barber, C., & Pillemer, K. (2019). Interventions to Reduce Ageism Against Older Adults: A Systematic Review and Meta-Analysis. *American Journal of Public Health*, 109(8), e1-e9. <https://doi.org/10.2105/ajph.2019.305123#>

Cherry, K. E., Blanchard, B., Walker, E. J., Smitherman, E. A., & Lyon, B. A. (2014). Knowledge of memory aging across the lifespan. *The Journal of Genetic Psychology*, 175(6), 547-553. <https://doi.org/10.1080/00221325.2014.982069>

Chonody, J. M. (2015). Addressing ageism in students: A systematic review of the pedagogical intervention literature. *Educational Gerontology*, 41(12), 859-887. <https://doi.org/10.1080/03601277.2015.1059139>

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Routledge. <https://doi.org/10.4324/9780203771587>

Cross, K. P. (1981). *Adults as learners: Increasing participation and facilitating learning*. Jossey-Bass.

- Davis, N. C., & Friedrich, D. (2004). Knowledge of Aging and Life Satisfaction among Older Adults. *The International Journal of Aging and Human Development*, 59(1), 43-61. <https://doi.org/10.2190/u9wd-m79k-9hb8-g9jy>
- Davis, N. C., & Friedrich, D. (2010). Age stereotypes in middle-aged through old-old adults. *International journal of aging & human development*, 70(3), 199-212. <https://doi.org/10.2190/AG.70.3.b>
- Davis, T., & Soka, A. (2019). What about aging? Perspectives from high school teachers and students on integrating aging into the high school curriculum. *Gerontology & Geriatrics Education (Print)*, 40(4), 480-490. <https://doi.org/10.1080/02701960.2019.1652822>
- De Paula Couto, C., Ostermeier, R., & Rothermund, K. (2022). Age Differences in Age Stereotypes: The Role of Life Domain and Cultural Context. *GeroPsych*, 35(4), 177-188. <https://doi.org/10.1024/1662-9647/a000272>
- Desjardins, R., Rubenson, K., & Milana, M. (2006). *Unequal chances to participate in adult learning: International perspectives* (Fundamentals of Educational Planning No. 83). International Institute for Educational Planning, UNESCO. <https://escholarship.org/uc/item/8tk771cj>
- Diehl, M. K., & Wahl, H.-W. (2010). Awareness of age-related change: Examination of a (mostly) unexplored concept. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*, 65B(3), 340-350. <https://doi.org/10.1093/geronb/gbp110>

- Diehl, M., Wahl, H. W., Barrett, A. E., Brothers, A. F., Miche, M., Montepare, J. M., Westerhof, G. J., & Wurm, S. (2014). Awareness of Aging: Theoretical Considerations on an Emerging Concept. *Developmental review, 34*(2), 93-113. <https://doi.org/10.1016/j.dr.2014.01.001>
- Diehl, M., Wettstein, M., Spuling, S. M., & Wurm, S. (2021). Age-related change in self-perceptions of aging: Longitudinal trajectories and predictors of change. *Psychology and Aging, 36*(3), 344-359. <https://doi.org/10.1037/pag0000524>
- Dittmann-Kohli, F., Kohli, M., Künemund, H., Motel, A., Steinleitner, C., & Westerhof, G., with the infas Sozialforschung (1997). *Lebenszusammenhänge, Selbst- und Lebenskonzeptionen [Life contexts, conceptions of self and life]*. Free University.
- Djikic, M., Langer, E. J., & Stapleton, S. F. (2008). Reducing Stereotyping Through Mindfulness: Effects on Automatic Stereotype-Activated Behaviors. *Journal of Adult Development, 15*(2), 106-111. <https://doi.org/10.1007/s10804-008-9040-0>
- Doncel-García, B., Lizaso, I., Fraile-Bermúdez, A. B., Mosquera-Lajas, Á., Santamaría-Trincado, B., Sanz, B., & Irazusta, J. (2022). Reducing negative aging stereotypes via educational intervention in older people: a randomized controlled study. *Research on Aging, 45*(5-6), 475-485. <https://doi.org/10.1177/01640275221126100>

Donizzetti, A. R. (2019). Ageism in an Aging Society: The Role of Knowledge, Anxiety about Aging, and Stereotypes in Young People and Adults. *International Journal of Environmental Research and Public Health*, 16(8), 1329.

<https://doi.org/10.3390/ijerph16081329>

Donlon, M. M., Ashman, O. & Levy, B. R. (2005). Re-vision of older television characters: A stereotype-awareness intervention. *Journal of Social Issues*, 61(2), 307-319. <https://doi.org/10.1111/j.1540-4560.2005.00407.x>

Dweck, C. S. (2006). *Mindset: The new psychology of success*. Random House.

El-Sayed, M. M., Hawash, M. M., Khedr, M. A., Hafez, S. A., Salem, E.-S. A. E.-H., Essa, S. A., Sayyd, S. M., & El-Ashry, A. M. (2024). Cognitive flexibility's role in shaping self-perception of aging, body appreciation, and self-efficacy among community-dwelling older women. *BMC Nursing*, 23(1).

<https://doi.org/10.1186/s12912-024-01874-4>

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G\*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175-191.

Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford University Press.

Field, A. P. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). SAGE Publications.

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, 82(6), 878-902. <https://doi.org/10.1037/0022-3514.82.6.878>

Fuente-Hernández, L., de la Fuente-Ruiz, E., Gracia-García, P., Serrano-García, I., Álvarez-Mon, M. Á., & Molina-Ruiz, R. M. (2025). Using social media-based positive education to challenge negative stereotypes of aging: a quasi-experimental approach. *BMC Public Health*, 25(1).

<https://doi.org/10.1186/s12889-025-21327-0>

Gellis, Z. D., Sherman, S., & Lawrance, F. (2003). First year graduate social work students' knowledge of and attitude toward older adults. *Educational Gerontology*, 29(1), 1-16. <https://doi.org/10.1080/713844235>

Henning, G., Spuling, S. M. & Wünsche, J. (2025). *Bildungsbeteiligung und Altersbilder von Menschen in der zweiten Lebenshälfte: Befunde des Deutschen Alterssurveys (DEAS) 2023* [DZA-Fact Sheet]. Deutsches Zentrum für Altersfragen. <https://doi.org/10.60922/1qbs-hd92>

Hess, T. M., Auman, C., Colcombe, S. J., & Rahhal, T. A. (2003). The impact of stereotype threat on age differences in memory performance. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 58(1), 3-11. <https://doi.org/10.1093/geronb/58.1.p3>

Higgins, E. T. (1987). Self-discrepancy: a theory relating self and affect. *Psychological review*, 94(3), 319. <https://doi.org/10.1037/0033-295X.94.3.319>

Hooper, N., Crumpton, A., Robinson, M. D., & Meier, B. P. (2018). A weight-related growth mindset increases negative attitudes toward obese people. *Journal of Applied Social Psychology*, 48(9), 488-493.

<https://doi.org/10.1111/jasp.12528>

- Huang, T., & Rothermund, K. (2023). Endorsement and embodiment of cautiousness-related age stereotypes. *Frontiers in Psychology, 14*, 1091763. <https://doi.org/10.3389/fpsyg.2023.1091763>
- Hunsaker, A., & Hargittai, E. (2018). A review of Internet use among older adults. *New Media & Society, 20*(2), 3937-3954. <https://doi.org/10.1177/1461444818787348>
- Iacobucci, D., Román, S., Moon, S., & Rouziès, D. (2025). A tutorial on what to do with skewness, kurtosis, and outliers: New insights to help scholars conduct and defend their research. *Psychology & Marketing, 42*(5), 1398-1414. <https://doi.org/10.1002/mar.22187>
- IBM Corp. (2024). *IBM SPSS Statistics* (Version 30.0) [Computer software]. IBM Corp. <https://www.ibm.com/products/spss-statistics>
- Ingold, K., & Lueke, A. (2022). A brief mindfulness intervention reduces the tendency to endorse negative Black stereotypes. *Journal of Applied Social Psychology, 53*(2), 112-120. <https://doi.org/10.1111/jasp.12931>
- Jaggars, S. S. (2014). Choosing between online and Face-to-Face courses: Community College student voices. *The American Journal of Distance Education, 28*(1), 27-38. <https://doi.org/10.1080/08923647.2014.867697>
- Jensen, S. A. (2011). In-Class versus online video lectures. *Teaching of Psychology, 38*(4), 298-302. <https://doi.org/10.1177/0098628311421336>
- Kaspar, R., Gabrian, M., Brothers, A., Wahl, H.-W., & Diehl, M. (2019). Measuring awareness of age-related change: Development of a 10-item short form for use in large-scale surveys. *The Gerontologist, 59*(3), e130-e140. <https://doi.org/10.1093/geront/gnx213>

Kaspar, R., Schilling, O. K., Diehl, M., Gerstorf, D., Rupprecht, F. S., Sabatini, S., & Wahl, H.-W. (2023). Differences in self-perceptions of aging across the adult lifespan: The sample case of awareness of age-related gains and losses. *Psychology and Aging, 38*(8), 824-836.

<https://doi.org/10.1037/pag0000783>

Kaspar, R., Simonson, J., Tesch-Römer, C., Wagner, M., & Zank, S. (2023). Gutes Leben im hohen Alter: Fazit und Implikationen. *Schriften zu Gesundheit und Gesellschaft - Studies on Health and Society, 289-300*.

[https://doi.org/10.1007/978-3-662-66630-2\\_12](https://doi.org/10.1007/978-3-662-66630-2_12)

Kaspar, R., Simonson, J., Tesch-Römer, C., Wagner, M., Zank, S. (2023). Gutes Leben im hohen Alter: Fazit und Implikationen. In: Kaspar, R., Simonson, J., Tesch-Römer, C., Wagner, M., Zank, S. (Eds.) *Hohes Alter in Deutschland. Schriften zu Gesundheit und Gesellschaft - Studies on Health and Society, vol 8*. Springer, Berlin, Heidelberg. [https://doi.org/10.1007/978-3-662-](https://doi.org/10.1007/978-3-662-66630-2_12)

[66630-2\\_12](https://doi.org/10.1007/978-3-662-66630-2_12)

Keinan, G., Friedland, N., & Even-Haim, G. (2000). The effect of stress and self-esteem on social stereotyping. *Journal of Social and Clinical*

*Psychology, 19*(2), 206-219. <https://doi.org/10.1521/jscp.2000.19.2.206>

Kessler, E. M., Rakoczy, K., & Staudinger, U. M. (2004). The portrayal of older people in prime time television series: the match with gerontological evidence.

*Ageing & Society, 24*(4), 531-552.

<https://doi.org/10.1017/s0144686x04002338>

- Kite, M. E., Stockdale, G. D., Whitley, B. E., & Johnson, B. T. (2005). Attitudes Toward Younger and Older Adults: An Updated Meta-Analytic Review. *Journal of Social Issues*, 61(2), 241-266. <https://doi.org/10.1111/j.1540-4560.2005.00404.x>
- Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). The Guilford Press.
- Knight, R. L., Chalabaev, A., McNarry, M. A., Mackintosh, K. A., & Hudson, J. (2021). Do age stereotype-based interventions affect health-related outcomes in older adults? A systematic review and future directions. *British Journal of Health Psychology*, 27(2), 338-373. <https://doi.org/10.1111/bjhp.12548>
- Kornadt, A. E., & Rothermund, K. (2011). Contexts of Aging: Assessing evaluative age stereotypes in different life domains. *The Journals of Gerontology: Series B*, 66B(5), 547-556. <https://doi.org/10.1093/geronb/gbr036>
- Kornadt, A. E., & Rothermund, K. (2015). Views on Aging: Domain-Specific Approaches and Implications for Developmental Regulation. *Annual Review of Gerontology & Geriatrics*, 35(1), 121-144. <https://doi.org/10.1891/0198-8794.35.121>
- Kornadt, A. E., Voss, P., & Rothermund, K. (2017). Age Stereotypes and Self-Views Revisited: Patterns of Internalization and Projection Processes Across the Life Span. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*, 72(4), 582-592. <https://doi.org/10.1093/geronb/gbv099>

Kruse, A., & Schmitt, E. (2006). A multidimensional scale for the measurement of agreement with age stereotypes and the salience of age in social interaction. *Ageing & Society*, 26(3), 393-411.

<https://doi.org/10.1017/S0144686X06004703>

Lakens, D. (2013). Calculating and reporting effect sizes to facilitate cumulative science: a practical primer for t-tests and ANOVAs. *Frontiers in Psychology*, 4. Article 863. <https://doi.org/10.3389/fpsyg.2013.00863>

Lamont, R. A., Swift, H. J., & Abrams, D. (2015). A review and meta-analysis of age-based stereotype threat: negative stereotypes, not facts, do the damage. *Psychology and aging*, 30(1), 180-193.

<https://doi.org/10.1037/a0038586>

Lepianka, D. (2014). How similar, how different? On Dutch media depictions of older and younger people. *Ageing & Society*, 35(5), 1095-1113.

<https://doi.org/10.1017/s0144686x14000142>

Levy, B. (2000). Handwriting as a reflection of aging self-stereotypes. *Journal of Geriatric Psychiatry*, 33(1), 81-94. Levy, B. R. (2009). Stereotype embodiment. *Current Directions in Psychological Science*, 18(6), 332-336.

<https://doi.org/10.1111/j.1467-8721.2009.01662.x>

Levy, B. (2022). *Breaking the age code*. Random House.

Levy, B. R. (2003). Mind Matters: Cognitive and Physical Effects of Aging Self-Stereotypes. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*, 58(4), 203-211.

<https://doi.org/10.1093/geronb/58.4.P203>

- Levy, B. R. (2009). Stereotype embodiment: A psychosocial approach to aging. *Current Directions in Psychological Science*, 18(6), 332–336.  
<https://doi.org/10.1111/j.1467-8721.2009.01662.x>
- Levy, B. R. (2017). Age-Stereotype paradox: Opportunity for social change. *The Gerontologist*, 57(Suppl 2), S118-S126.  
<https://doi.org/10.1093/geront/gnx059>
- Levy, B. R., & Leifheit-Limson, E. C. (2009). The stereotype-matching effect: Greater influence on functioning when age stereotypes correspond to outcomes. *Psychology and Aging*, 24(1), 230-233. <https://doi.org/10.1037/a0014563>
- Levy, B. R., Ferrucci, L., Zonderman, A. B., Slade, M. D., Troncoso, J. C., & Resnick, S. M. (2016). A culture–brain link: Negative age stereotypes predict Alzheimer’s disease biomarkers. *Psychology and Aging*, 31(1), 82-88.  
<https://doi.org/10.1037/pag0000062>
- Levy, B. R., Hausdorff, J. M., Hencke, R., & Wei, J. Y. (2000). Reducing cardiovascular stress with positive self-stereotypes of aging. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*, 55(4), 205-213.  
<https://doi.org/10.1093/geronb/55.4.p205>
- Levy, B. R., Slade, M. D., & Gill, T. M. (2006). Hearing decline predicted by elders’ stereotypes. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences* 61(2), 82-87. <https://doi.org/10.1093/geronb/61.2.p82>
- Levy, B. R., Slade, M. D., Kunkel, S., & Kasl, S. V. (2002). Longevity increased by positive self-perceptions of aging. *Journal of Personality and Social Psychology*, 83(2), 261-270. <https://doi.org/10.1037/0022-3514.83.2.261>

- Levy, B. R., Slade, M. D., Murphy, T. E., & Gill, T. M. (2012). Association between positive age stereotypes and recovery from disability in older persons. *JAMA*, *308*(19), 1972-1973. <https://doi.org/10.1001/jama.2012.14541>
- Levy, B. R., Zonderman, A. B., Slade, M. D., & Ferrucci, L. (2009). Age Stereotypes Held Earlier in Life Predict Cardiovascular Events in Later Life. *Psychological Science*, *20*(3), 296-298. <https://doi.org/10.1111/j.1467-9280.2009.02298.x>
- Levy, S. R. (2016). Toward Reducing Ageism: PEACE (Positive Education about Aging and Contact Experiences) Model. *The Gerontologist*, *58*(2), 226-232. <https://doi.org/10.1093/geront/gnw116>
- Losada-Baltar, A., Jiménez-Gonzalo, L., Gallego-Alberto, L., Pedroso-Chaparro, M. D. S., Fernandes-Pires, J., & Márquez-González, M. (2021). "We are staying at home." Association of self-perceptions of aging, personal and family resources, and loneliness with psychological distress during the lock-down period of COVID-19. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*, *76*(2), e10–e16. <https://doi.org/10.1093/geronb/gbaa048>
- Lueke, A., & Gibson, B. (2015). Mindfulness meditation reduces implicit age and race bias: The role of reduced automaticity of responding. *Social Psychological and Personality Science*, *6*(3), 284–291. <https://doi.org/10.1177/1948550614559651>
- Lunau, T., Siegrist, J., Dragano, N., & Wahrendorf, M. (2015). The association between education and work stress: does the policy context matter?. *PloS one*, *10*(3), e0121573. <https://doi.org/10.1371/journal.pone.0121573>

- Lytle, A., & Levy, S. R. (2017). Reducing ageism: Education about aging and extended contact with older adults. *The Gerontologist*, 59(3), 580-588.  
<https://doi.org/10.1093/geront/gnx177>
- Lytle, A., & Levy, S. R. (2022). Reducing ageism toward older adults and highlighting older adults as contributors during the COVID-19 pandemic. *Journal of Social Issues*, 78(4), 1066-1084. <https://doi.org/10.1111/josi.12545>
- Maas, C. J. M., & Hox, J. J. (2004). Robustness issues in multilevel regression analysis. *Statistica Neerlandica*, 58, 127-137.  
<https://doi.org/10.1046/j.0039-0402.2003.00252.x>
- Maas, C. J. M., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences*, 1(3), 86-92. <https://doi.org/10.1027/1614-2241.1.3.86>
- Macdonald, J., & Levy, S. (2020). Addressing stereotypes of aging and interest in careers working with older adults through education. *Gerontology & Geriatrics Education*, 42(3), 363-379.  
<https://doi.org/10.1080/02701960.2020.1854246>
- MacNeil, A. M. (2025). Growth mindset of aging and its association with emerging adults' self and general perceptions of aging. *Discover Psychology*, 5(1), 130.  
<https://doi.org/10.1007/s44202-025-00464-y>

Martín-Carbonell, M., Espejo, B., Castro-Melo, G. P., Sequeira-Daza, D., & Checa, I.

(2023). Psychometric properties of and measurement invariance in the questionnaire of stereotypes toward older adulthood in health care college students and health professionals of Colombia: Psychometric study.

*Journal of Medical Internet Research*, 25, e42340.

<https://doi.org/10.2196/42340>

McConatha, J. T., Schnell, F., & McKenna, A. M. (1999). Description of older adults as depicted in magazine advertisements. *Psychological Reports*, 85(3),

1051-1056. <https://doi.org/10.2466/pr0.1999.85.3.1051>

McGuire, S. L. (2017). Aging education: A worldwide imperative. *Creative Education*,

8, 1878-1891. <https://doi.org/10.4236/ce.2017.812128>

McGuire, S. L., Klein, D. A., & Couper, D. P. (2005). Aging education: a national imperative. *Educational Gerontology*, 31(6), 443-460.

<https://doi.org/10.1080/03601270590928170>

McNeish, D., & Stapleton, L. M. (2016). The Effect of Small Sample Size on Two-

Level Model Estimates: A Review and Illustration. *Educational Psychology Review*, 28, 295-314. <https://doi.org/10.1007/s10648-014-9287-x>

Mendoza-Núñez, V. M., Sarmiento-Salmorán, I., Marín-Cortés, R., Martínez-

Maldonado, M. L., & Ruiz-Ramos, M. (2018). Influence of the self-perception of old age on the effect of a healthy aging program. *Journal of*

*Clinical Medicine*, 7(5), 106. <https://doi.org/10.3390/jcm7050106>

- Miner-Rubino, K., Winter, D. G., & Stewart, A. J. (2004). Gender, social class, and the subjective experience of aging: self-perceived personality change from early adulthood to late midlife. *Personality & social psychology bulletin*, 30(12), 1599–1610. <https://doi.org/10.1177/0146167204271178>
- Monahan, C., Macdonald, J., Lytle, A., Apriceno, M., & Levy, S. R. (2020). COVID-19 and ageism: How positive and negative responses impact older adults and society. *American Psychologist*, 75(7), 887–896. <https://doi.org/10.1037/amp0000699>
- Ng, R. (2021). Societal age stereotypes in the U.S. and U.K. from a media database of 1.1 billion words. *International Journal of Environmental Research and Public Health*, 18(16), 8822. <https://doi.org/10.3390/ijerph18168822>
- Ng, R., Allore, H. G., Trentalange, M., Monin, J. K., & Levy, B. R. (2015). Increasing negativity of age stereotypes across 200 years: Evidence from a database of 400 million words. *PLOS ONE*, 10(2), e0117086. <https://doi.org/10.1371/journal.pone.0117086>
- North, M. S., & Fiske, S. T. (2015). Modern attitudes toward older adults in the aging world: a cross-cultural meta-analysis. *Psychological Bulletin*, 141(5), 993-1021. <https://doi.org/10.1037/a0039469>
- Nuevo, R., Wetherell, J. L., Montorio, I., Ruiz, M. A., & Cabrera, I. (2009). Knowledge about aging and worry in older adults: testing the mediating role of intolerance of uncertainty. *Aging & mental health*, 13(1), 135-141. <https://doi.org/10.1080/13607860802591088>

Payne, B. K. (2005). Conceptualizing control in social cognition: how executive functioning modulates the expression of automatic stereotyping. *Journal of personality and social psychology*, 89(4), 488-503.

<https://doi.org/10.1037/0022-3514.89.4.488>

Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. *Advances in Experimental Social Psychology*, 19, 123-205.

[https://doi.org/10.1016/S0065-2601\(08\)60214-2](https://doi.org/10.1016/S0065-2601(08)60214-2)

Ragan, A. M., & Bowen, A. M. (2001). Improving attitudes regarding the elderly population: the effects of information and reinforcement for change. *The Gerontologist*, 41(4), 511-515. <https://doi.org/10.1093/geront/41.4.511>

Raman, P., Harwood, J., Weis, D. S., Anderson, J. H., & Miller, G. (2008). Portrayals of older adults in U.S. and Indian magazine advertisements: A cross-cultural comparison. *Howard Journal of Communications*, 19(3), 221-240.

<https://doi.org/10.1080/10646170802218214>

Robertson, D. A., Savva, G. M., King-Kallimanis, B. L., & Kenny, R. A. (2015).

Negative perceptions of aging and decline in walking speed: a self-fulfilling prophecy. *PLOS ONE*, 10(4), e0123260.

<https://doi.org/10.1371/journal.pone.0123260>

Rothermund, K., & De Paula Couto, M. C. P. (2024). Age stereotypes: Dimensions, origins, and consequences. *Current Opinion in Psychology*, 55, 101747.

<https://doi.org/10.1016/j.copsyc.2023.101747>

Rubenson, K., & Desjardins, R. (2009). The impact of welfare state regimes on barriers to participation in adult education. *Adult Education Quarterly*, 59(3), 187-207. <https://doi.org/10.1177/0741713609331543>

- Ryazanov, A. A., & Christenfeld, N. J. (2018). Incremental mindsets and the reduced forgiveness of chronic failures. *Journal of Experimental Social Psychology, 76*, 33-41. <https://doi.org/10.1016/j.jesp.2017.12.003>
- Sánchez, S. C., Doncel-García, B., Imaz-Aramburu, I., Irazusta, A., Martín-Gamboa, B., Fernandez-Atutxa, A., Cepeda-Miguel, S., & Fraile-Bermúdez, A. B. (2025). A knowledge- and empathy-based intervention to reduce negative stereotypes about older adults among nursing students: A pre-, post-, and six-month follow-up study. *Geriatric Nursing, 64*, 103422. <https://doi.org/10.1016/j.gerinurse.2025.103422>
- Sargent-Cox, K. A., Anstey, K. J., & Luszcz, M. A. (2012). Change in health and self-perceptions of aging over 16 years: The role of psychological resources. *Health Psychology, 31*(4), 423-432. <https://doi.org/10.1037/a0027464>
- Schoger, L. I. (2023). Coping with work-related stressors: does education reduce work-related stress? *Journal of Public Health, 33*(5), 1123-1134. <https://doi.org/10.1007/s10389-023-02070-5>
- Spangenberg, L., Zenger, M., Glaesmer, H., Brähler, E., & Strauss, B. (2017). Assessing age stereotypes in the German population in 1996 and 2011: socio-demographic correlates and shift over time. *European journal of ageing, 15*(1), 47-56. <https://doi.org/10.1007/s10433-017-0432-5>
- Statista. (2024, January 2). *Internetnutzung nach Alter in Österreich bis 2022*. <https://de.statista.com/statistik/daten/studie/184967/umfrage/internet-nutzung-in-oesterreich-nach-alter/>

Statista. (2025, January 8). *Fernsehkonsument der Deutschen in Minuten 2023 (nach Altersgruppen)*.

<https://de.statista.com/statistik/daten/studie/2913/umfrage/fernsehkonsument-der-deutschen-in-minuten-nach-altersgruppen/>

Steele, C. M., Spencer, S. J., & Aronson, J. (2002). Contending with group image: The psychology of stereotype and social identity threat. In M. P. Zanna (Ed.), *Advances in experimental social psychology*, (Vol. 34, pp. 379-440). Academic Press. [https://doi.org/10.1016/S0065-2601\(02\)80009-0](https://doi.org/10.1016/S0065-2601(02)80009-0)

Steverink, N., Westerhof, G. J., Bode, C., & Dittmann-Kohli, F. (2001). The personal experience of aging, individual resources, and Subjective Well-Being. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*, 56(6), 364-373. <https://doi.org/10.1093/geronb/56.6.p364>

Tully-Wilson, C., Bojack, R., Milllear, P. M., Stallman, H. M., Allen, A., & Mason, J. (2021). Self-perceptions of aging: A systematic review of longitudinal studies. *Psychology and Aging*, 36(7), 773-789. <https://doi.org/10.1037/pag0000638>

UNESCO Institute for Statistics. (2012). *International Standard Classification of Education: ISCED 2011*. Montreal: UNESCO Institute for Statistics. ISBN 978-92-9189-123-8.

Wahl, H. (2017). *Die neue Psychologie des Alterns: Überraschende Erkenntnisse über unsere längste Lebensphase*. Kösel-Verlag.

- West, S. G., Finch, J. F., & Curran, P. J. (1996). Structural equation models with nonnormal variables: Problems and remedies. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 56-75). SAGE Publications.
- Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology, 73*(1), 73-90.  
<https://doi.org/10.1037/0022-3514.73.1.73>
- Wurm, S., Diehl, M., Kornadt, A. E., Westerhof, G. J., & Wahl, H. (2017). How do views on aging affect health outcomes in adulthood and late life? Explanations for an established connection. *Developmental Review, 46*, 27-43. <https://doi.org/10.1016/j.dr.2017.08.002>
- Wurm, S., Warner, L. M., Ziegelmann, J. P., Wolff, J. K., & Schüz, B. (2013). How do negative self-perceptions of aging become a self-fulfilling prophecy? *Psychology and Aging, 28*(4), 1088-1097. <https://doi.org/10.1037/a0032845>
- Wurtele, S. K. (2009). "Activities of Older Adults" Survey: Tapping into Student Views of the Elderly. *Educational Gerontology, 35*(11), 1026-1031.  
<https://doi.org/10.1080/03601270902973557>
- Wurtele, S. K., & Maruyama, L. (2013). Changing students' stereotypes of older adults. *Teaching of Psychology, 40*(1), 59-61.  
<https://doi.org/10.1177/0098628312465867>

Zomer, A., & Benneworth, P. (2011). The rise of the university's third mission. In J.

Enders, H. F. de Boer, & D. F. Westerheijden (Eds.), *Reform of higher*

*education in Europe* (pp. 81-101). SensePublishers.

[https://doi.org/10.1007/978-94-6091-555-0\\_6](https://doi.org/10.1007/978-94-6091-555-0_6)

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### List of Abbreviations

AARC.....	<i>Awareness of Age-Related Change</i>
AIC.....	Akaike Information Criterion
BIC.....	Bayesian Information Criterion
c_R <sup>2</sup> .....	conditional R <sup>2</sup>
DSI.....	<i>Days Since Intervention</i>
ICCs.....	<i>Interclass Correlation Coefficients</i>
ISCED.....	International Standard Classification of Education
m_R <sup>2</sup> .....	marginal R <sup>2</sup>
ORs.....	<i>Odds ratios</i>
PEACE.....	<i>Positive Education about Aging and Contact Experiences</i>
Q1.....	<i>questions asked in questionnaire 1</i>
Q2.....	<i>questions asked in questionnaire 2</i>
Q3.....	<i>questions asked in questionnaire 3</i>
SET.....	Stereotype Embodiment Theory

## Appendix

### Appendix 1

#### Abstract

Both age stereotypes and self-perceptions of aging are associated with multiple negative outcomes across the lifespan. This study examined the effects of a single-session on-site educational lecture on age stereotypes, assessed with the AgeCog scales, as well as gain- and loss-related awareness of age-related change (AARC), measured using the AARC scale. The study further investigated whether potential changes would persist over a two-week period and whether changes in age stereotypes were moderated by educational level or chronological age. A total of 141 participants aged 19 to 83 attended one of six lectures, and 91 participants completed the two-week follow-up assessment. Multilevel analyses comparing pre- to post-intervention and pre- to follow-up assessments indicated significant improvements in age stereotypes as well as in gain- and loss-related AARC immediately following the lecture. Improvements in age stereotypes and gain-related AARC remained significant at the two-week follow-up, whereas changes in loss-related AARC were no longer significant. Cross-level interaction effects revealed that educational attainment significantly moderated pre-post changes in age stereotypes, with stronger improvements among participants with higher levels of education. In contrast, chronological age did not significantly moderate intervention effects. These findings suggest that brief educational interventions can positively influence age-related beliefs and self-perceptions, particularly for individuals with higher educational attainment. Implications, limitations, and directions for future research are discussed.

*Keywords:* age stereotypes, gain- and loss-oriented self-perceptions of aging, educational intervention, education

## Appendix 2

### Zusammenfassung

Altersstereotype und Selbstwahrnehmungen des Alterns sind mit zahlreichen negativen Auswirkungen über die Lebensspanne verbunden. Diese Studie untersuchte die Effekte eines einmaligen Vortrags vor Ort auf Altersstereotype (AgeCog-Skalen) sowie auf gewinn- und verlustbezogene Selbstwahrnehmung des Alterns (AARC-Skala). Zudem wurde geprüft, ob Veränderungen über zwei Wochen bestehen bleiben und ob sie durch Bildungsniveau oder chronologisches Alter moderiert werden. Insgesamt nahmen 141 Personen (19–83 Jahre) an einem der sechs Vorträge teil und 91 füllten die Follow-up-Befragung aus.

Multilevel-Analysen zeigten signifikante Verbesserungen in Altersstereotypen sowie in gewinn- und verlustbezogener Selbstwahrnehmung unmittelbar nach dem Vortrag. Verbesserungen in Altersstereotypen und gewinnbezogener Selbstwahrnehmung blieben nach zwei Wochen bestehen, während Veränderungen in der verlustbezogenen Selbstwahrnehmung nicht mehr signifikant waren. Cross-Level-Interaktionen zeigten, dass Teilnehmende mit höherem Bildungsniveau stärkere Verbesserungen der Altersstereotype von vor zu nach der Intervention erzielten, während chronologisches Alter keinen moderierenden Effekt hatte.

Die Ergebnisse deuten darauf hin, dass kurze Bildungsinterventionen Altersüberzeugungen und Selbstwahrnehmungen positiv beeinflussen können, insbesondere bei höher gebildeten Personen. Implikationen, Limitationen und Perspektiven für zukünftige Forschung werden diskutiert.

*Schlüsselwörter:* Altersstereotype, gewinn- und verlust-orientierte Selbstwahrnehmung, wissenschaftliche Intervention, Bildungsniveau

## Appendix 3

Flyer with Vienna Dates



# universität wien

## GESUND, VERBUNDEN & GELASSEN ALTERN: WIE GELINGT'S?

**Wie denkst Du über das Älterwerden?**  
 Unsere Denkweise beeinflusst unser Leben.  
 In einem spannenden **Vortrag** der Universität Wien werden Altersmythen aufgedeckt und Wege zu einem aktiven, zufriedenen Leben in guter Gesellschaft aufgezeigt.

Der Vortrag richtet sich an alle Altersklassen **ab 18 Jahren**. Die Teilnahme ist **kostenlos**. Ich würde mich freuen, wenn Du freiwillig Fragebögen ausfüllst und damit zu neuen **wissenschaftlichen Erkenntnissen** beiträgst.

**WANN?** 26.06.2024, BEGINN: 18 UHR

**WO?** UNIVERSITÄT WIEN, LIEBIGGASSE 5  
 LINKE STIEGE, 2. STOCK, HÖRSAAL G

Barrierefreier Zugang über den Innenhof möglich!



JETZT  
ANMELDEN



### BIST DU DABEI?

Melde Dich an:

- Scanne diesen **QR-Code** oder
- SMS/Anruf unter **+43 681 819 60 190** oder
- E-Mail an **a11928924@unet.univie.ac.at**



### Vortragende

Stefanie Kierein, Bsc  
 Psychologin in Ausbildung

Ich freu mich auf Dich!





## Appendix 4

Flyer with Burgenland Dates


**universität  
wien**

## GESUND, VERBUNDEN & GELASSEN ALTERN: WIE GELINGT'S?

**Wie denkst Du über das Älterwerden?**  
 Unsere Denkweise beeinflusst unser Leben.  
 In einem spannenden **Vortrag** der Universität Wien werden Altersmythen aufgedeckt und Wege zu einem aktiven, zufriedenen Leben in guter Gesellschaft aufgezeigt.

Der Vortrag richtet sich an alle Altersklassen **ab 18 Jahren**. Die Teilnahme ist **kostenlos**. Ich würde mich freuen, wenn Du freiwillig Fragebögen ausfüllst und damit zu neuen **wissenschaftlichen Erkenntnissen** beiträgst.

**TERMINE:**

**05.07.2024**, 19 Uhr - Gasthaus Peck, Pamhagen  
**12.07.2024**, 19 Uhr - Sodla Wirt, Illmitz  
**26.07.2024**, 19 Uhr - Landgasthof Zur Alten Mauth, Neusiedl am See



JETZT  
ANMELDEN



### BIST DU DABEI?

Melde Dich an:

- Scanne diesen **QR-Code** oder
- SMS/Anruf unter **+43 681 819 60 190** oder
- E-Mail an **a11928924@unet.univie.ac.at**



**Vortragende**  
 Stefanie Kierein, Bsc  
 Psychologin in Ausbildung

Ich freu mich auf Dich!







**Mit zunehmendem Alter bemerke ich, dass ...**

... ich ein besseres Gespür dafür habe, was mir wichtig ist.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... ich weniger Energie habe.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... ich mich mehr von der Hilfe anderer abhängig fühle.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... ich mehr Freiheit habe, meine Tage so zu erleben, wie ich will.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... es mir schwerer fällt, mich zu motivieren.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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Alle Menschen werden älter. Das Älterwerden ist mit Veränderungen in vielen Lebensbereichen verbunden. Bitte lesen Sie nun, die untenstehenden Aussagen und geben an, inwieweit diese Veränderungen aus Ihrer Sicht typisch sind für das Älterwerden im Allgemeinen. Denken Sie hierbei nur daran, wie die meisten Menschen normalerweise älter werden.

Bitte geben Sie für jede der folgenden Aussagen an, wie gut diese Ihrer Meinung nach zutrifft.

### Älterwerden bedeutet für die meisten Menschen, ...

... dass sie nicht mehr so belastbar sind.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... dass sie körperliche Einbußen schlechter ausgleichen können.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... dass sie weniger vital und fit sind.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... dass ihr Gesundheitszustand schlechter wird.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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**Älterwerden bedeutet für die meisten Menschen, ...**

... dass sie nicht mehr so recht gebraucht werden.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... dass sie sich mit der Zeit häufiger langweilen.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... dass sie weniger respektiert werden.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... dass sie sich häufiger einsam fühlen.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... dass sie weiterhin viele Pläne machen.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... dass sie in der Lage sind, neue Dinge zu lernen.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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**Älterwerden bedeutet für die meisten Menschen, ...**

... dass sie weiterhin viele Ideen realisieren können.

stimme  
gar nicht zu         stimme  
voll und  
ganz zu

... dass sich ihre Fähigkeiten erweitern.

stimme  
gar nicht zu         stimme  
voll und  
ganz zu

**Einmal abgesehen von Ihrem tatsächlichen Alter:**

Wenn Sie es in Jahren ausdrücken sollen, wie alt fühlen Sie sich?

Was glauben Sie, wie viele Jahre Sie vielleicht alt werden?

Ab welchem Alter würden Sie jemanden als alt bezeichnen?

Sie haben bestimmt auch schon einmal gehört, dass jemand sagt, er wäre gerne jünger oder älter, als er nach Jahren ist. Wenn Sie sich vorstellen, Sie könnten sich Ihr Alter aussuchen: Wie alt möchten Sie jetzt sein?

## 5 Fragen zu Ihrem Gesundheitszustand

Wie bewerten Sie Ihren derzeitigen Gesundheitszustand?

- Sehr schlecht
- Schlecht
- Mittel
- Gut
- Sehr gut

Wie hat sich Ihr Gesundheitszustand in den letzten 6/10 Jahren verändert?

- Ist viel schlechter geworden
- Ist etwas schlechter geworden
- Ist gleich geblieben
- Ist etwas besser geworden
- Ist viel besser geworden

Wenn Sie an Ihre Gesundheit vor 6/10 Jahren denken: Wie war Ihr damaliger Gesundheitszustand?

- Sehr schlecht
- Schlecht
- Mittel
- Gut
- Sehr gut

Was erwarten Sie, wie wird sich Ihr Gesundheitszustand in Zukunft verändern?

- Wird viel schlechter werden
- Wird etwas schlechter werden
- Wird gleich bleiben
- Wird etwas besser werden
- Wird viel besser werden

Wie bewerten Sie Ihren Gesundheitszustand im Vergleich zur Gesundheit von anderen Menschen Ihres Alters?

- Viel schlechter
- Etwas schlechter
- Gleich
- Etwas besser
- Viel besser

**Wie blicken Sie auf Ihr Leben im hohen Alter?**

Ich habe Angst, dass meine Freund\*innen in meinem hohen Alter nicht mehr am Leben sein werden.

stimme gar  
nicht zu

stimme voll  
und ganz  
zu

Ich habe Angst, dass es mir schwerfallen wird, im hohen Alter Zufriedenheit zu finden.

stimme gar  
nicht zu

stimme voll  
und ganz  
zu

Je älter ich werde, desto mehr Sorge ich mich um meine Gesundheit.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Auch im hohen Alter werde ich genug zu tun haben, um mich zu beschäftigen.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich werde nervös, wenn ich daran denke, dass im hohen Alter jemand anderes für mich Entscheidungen treffen könnte.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich erwarte, dass sich das Leben auch im hohen Alter gut anfühlen wird.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich mache mir Sorgen, dass die Menschen mich ignorieren werden, wenn ich sehr alt bin.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich glaube, dass ich auch im hohen Alter noch in der Lage sein werde, die meisten Dinge selbstständig zu erledigen.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich habe Angst, dass das Leben an Bedeutung verlieren wird, wenn ich sehr alt werde.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich erwarte, dass ich mich im hohen Alter, genauso wie ich bin, wohlfühlen werde.

stimme gar  
nicht zu

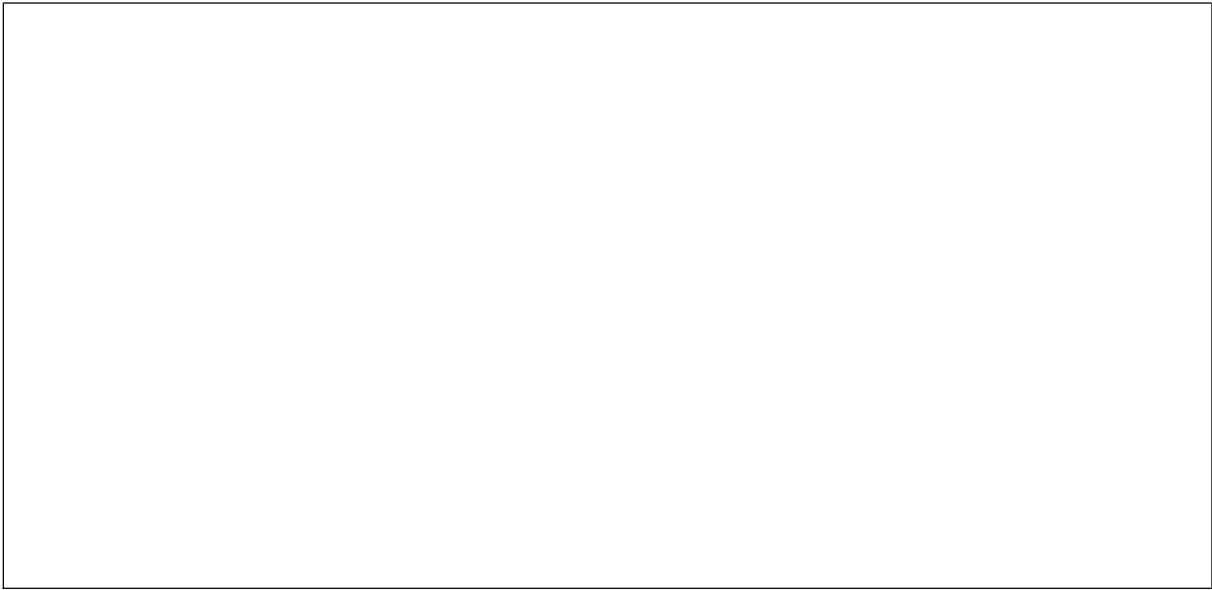
stimme  
voll und  
ganz zu

Was war Ihre Motivation heute an diesem Vortrag teilzunehmen? (Mehrfachantwort möglich!)

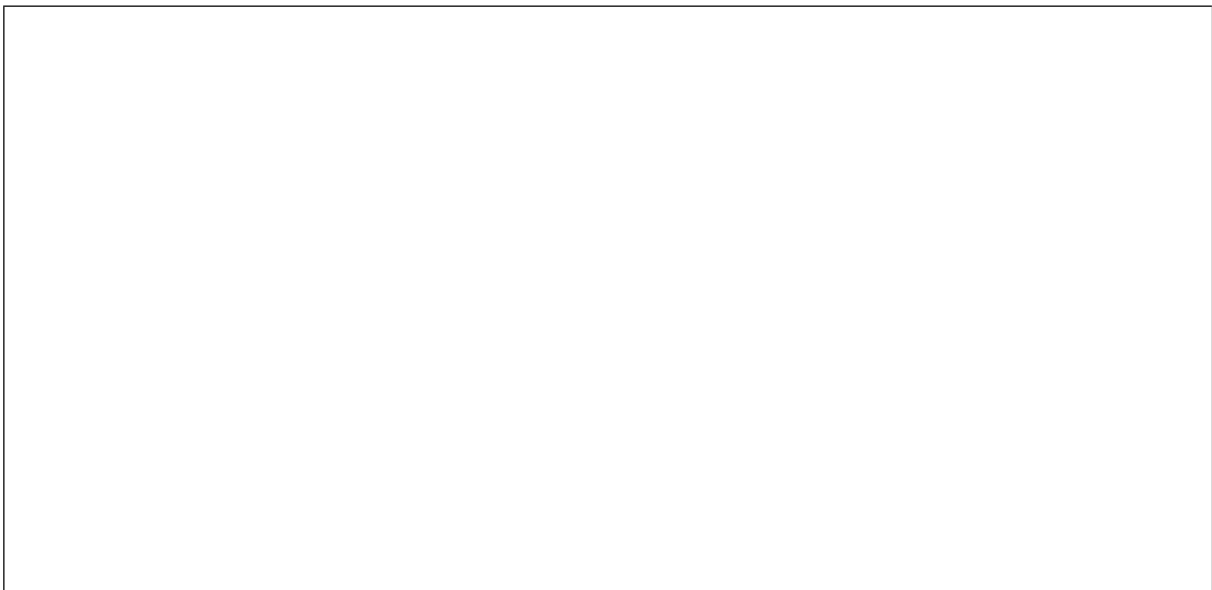
- Ich möchte die Vortragende unterstützen.
- Das Thema interessiert mich.
- Das Thema hat berufspraktische Relevanz für mich.
- Der Termin hat gut in meinen Kalender gepasst.
- Ich möchte zur Forschung beitragen.
- Ich wollte an einem sozialen Event teilnehmen.
- Ich bin gemeinsam mit befreundeten Personen/Familienmitgliedern hier.
- Sonstiges, bitte spezifizieren: \_\_\_\_\_

**Was erwarten Sie von dem Vortrag?**

**Was könnte im besten Fall passieren?**



**Was könnte im schlechtesten Fall passieren?**



## Appendix 6

Post intervention questionnaire

### Fragebogen 2

Jeder Mensch hat bestimmte Vorstellungen davon, wie das Leben im Alter aussieht. Im Folgenden werden wir Ihnen Fragen zum Alter, dem Älterwerden und zu Veränderungen, die mit dem Alter einhergehen können, stellen. Zuerst finden Sie hier einige Aussagen zu Veränderungen, die man in jedem Alter erleben kann. Bitte geben Sie an, inwiefern Sie diese Veränderungen erleben.

#### Mit zunehmendem Alter bemerke ich, dass ...

...ich Beziehungen und andere Menschen wesentlich mehr schätze.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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...meine geistige Leistungsfähigkeit abnimmt.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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...ich meiner Gesundheit mehr Aufmerksamkeit widme.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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...ich meine Aktivitäten einschränken muss.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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...ich mehr Erfahrung und Wissen habe, um Dinge und Menschen einzuschätzen.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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**Mit zunehmendem Alter bemerke ich, dass ...**

... ich ein besseres Gespür dafür habe, was mir wichtig ist.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... ich weniger Energie habe.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... ich mich mehr von der Hilfe anderer abhängig fühle.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... ich mehr Freiheit habe, meine Tage so zu erleben, wie ich will.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... es mir schwerer fällt, mich zu motivieren.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

Alle Menschen werden älter. Das Älterwerden ist mit Veränderungen in vielen Lebensbereichen verbunden. Bitte lesen Sie nun, die untenstehenden Aussagen und geben an, inwieweit diese Veränderungen aus Ihrer Sicht typisch sind für das Älterwerden im Allgemeinen. Denken Sie hierbei nur daran, wie die meisten Menschen normalerweise älter werden.

Bitte geben Sie für jede der folgenden Aussagen an, wie gut diese Ihrer Meinung nach zutrifft.

### Älterwerden bedeutet für die meisten Menschen, ...

... dass sie nicht mehr so belastbar sind.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... dass sie körperliche Einbußen schlechter ausgleichen können.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... dass sie weniger vital und fit sind.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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... dass ihr Gesundheitszustand schlechter wird.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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**Älterwerden bedeutet für die meisten Menschen, ...**

... dass sie nicht mehr so recht gebraucht werden.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... dass sie sich mit der Zeit häufiger langweilen.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... dass sie weniger respektiert werden.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... dass sie sich häufiger einsam fühlen.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... dass sie weiterhin viele Pläne machen.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... dass sie in der Lage sind, neue Dinge zu lernen.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

**Älterwerden bedeutet für die meisten Menschen, ...**

... dass sie weiterhin viele Ideen realisieren können.

stimme  
gar nicht zu         stimme  
voll und  
ganz zu

... dass sich ihre Fähigkeiten erweitern.

stimme  
gar nicht zu         stimme  
voll und  
ganz zu

**Einmal abgesehen von Ihrem tatsächlichen Alter:**

Wenn Sie es in Jahren ausdrücken sollen, wie alt fühlen Sie sich?

Was glauben Sie, wie viele Jahre Sie vielleicht alt werden?

Ab welchem Alter würden Sie jemanden als alt bezeichnen?

Sie haben bestimmt auch schon einmal gehört, dass jemand sagt, er wäre gerne jünger oder älter, als er nach Jahren ist. Wenn Sie sich vorstellen, Sie könnten sich Ihr Alter aussuchen: Wie alt möchten Sie jetzt sein?

## 5 Fragen zu Ihrem Gesundheitszustand

Wie bewerten Sie Ihren derzeitigen Gesundheitszustand?

- Sehr schlecht
- Schlecht
- Mittel
- Gut
- Sehr gut

Wie hat sich Ihr Gesundheitszustand in den letzten 6/10 Jahren verändert?

- Ist viel schlechter geworden
- Ist etwas schlechter geworden
- Ist gleich geblieben
- Ist etwas besser geworden
- Ist viel besser geworden

Wenn Sie an Ihre Gesundheit vor 6/10 Jahren denken: Wie war Ihr damaliger Gesundheitszustand?

- Sehr schlecht
- Schlecht
- Mittel
- Gut
- Sehr gut

Was erwarten Sie, wie wird sich Ihr Gesundheitszustand in Zukunft verändern?

- Wird viel schlechter werden
- Wird etwas schlechter werden
- Wird gleich bleiben
- Wird etwas besser werden
- Wird viel besser werden

Wie bewerten Sie Ihren Gesundheitszustand im Vergleich zur Gesundheit von anderen Menschen Ihres Alters?

- Viel schlechter
- Etwas schlechter
- Gleich
- Etwas besser
- Viel besser

**Wie blicken Sie auf Ihr Leben im hohen Alter?**

Ich habe Angst, dass meine Freund\*innen in meinem hohen Alter nicht mehr am Leben sein werden.

stimme gar  
nicht zu

stimme voll  
und ganz  
zu

Ich habe Angst, dass es mir schwerfallen wird, im hohen Alter Zufriedenheit zu finden.

stimme gar  
nicht zu

stimme voll  
und ganz  
zu

Je älter ich werde, desto mehr Sorge ich mich um meine Gesundheit.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Auch im hohen Alter werde ich genug zu tun haben, um mich zu beschäftigen.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich werde nervös, wenn ich daran denke, dass im hohen Alter jemand anderes für mich Entscheidungen treffen könnte.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich erwarte, dass sich das Leben auch im hohen Alter gut anfühlen wird.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich mache mir Sorgen, dass die Menschen mich ignorieren werden, wenn ich sehr alt bin.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich glaube, dass ich auch im hohen Alter noch in der Lage sein werde, die meisten Dinge selbstständig zu erledigen.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich habe Angst, dass das Leben an Bedeutung verlieren wird, wenn ich sehr alt werde.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich erwarte, dass ich mich im hohen Alter, genauso wie ich bin, wohlfühlen werde.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

**Wie oft haben Sie Kontakt zu jüngeren Personen (z. B. Besuche, Telefonate, Nachrichten)?**

- täglich
- mehrmals pro Woche
- einmal pro Woche
- ein- bis dreimal im Monat
- mehrmals im Jahr
- seltener
- nie

**Wie oft haben Sie Kontakt zu Personen mittleren Alters (z. B. Besuche, Telefonate, Nachrichten)?**

- täglich
- mehrmals pro Woche
- einmal pro Woche
- ein- bis dreimal im Monat
- mehrmals im Jahr
- seltener
- nie

**Wie oft haben Sie Kontakt zu älteren Personen (z. B. Besuche, Telefonate, Nachrichten)?**

- täglich
- mehrmals pro Woche
- einmal pro Woche
- ein- bis dreimal im Monat
- mehrmals im Jahr
- seltener
- nie

**Hätten Sie an diesem Vortrag auch teilgenommen, wenn er online stattgefunden hätte?**

- nein
- eher nicht
- vielleicht
- eher schon
- ja

**Hätten Sie einen online Vortrag bevorzugt?**

- nein
- eher nicht
- vielleicht
- eher schon
- ja

**Wie gut hat Ihnen der Vortrag gefallen?**

- nicht gut
- eher nicht gut
- neutral
- eher gut
- sehr gut

**Waren Ihnen die Informationen aus dem Vortrag bereits bekannt?**

- nein
- eher nicht
- teils/teils
- eher schon
- ja

**Fanden Sie den Vortrag hilfreich?**

- nein
- eher nicht
- teils/teils
- eher schon
- ja

**Kennen Sie die Vortragende persönlich?**

- nein
- eher nicht
- teils/teils
- eher schon
- ja

**Welchem Geschlecht fühlen Sie sich zugehörig?**

- männlich
- weiblich
- divers
- keine Angabe

**Was ist Ihr höchster Bildungsabschluss?**

- Schule beendet ohne Abschluss
- noch Schüler\*in
- Volksschulabschluss/Hauptschulabschluss/NMS-Abschluss
- Abschluss d. Polytechnikum
- Lehre ohne Matura, Facharbeiter\*in
- Lehre mit Matura
- Berufsbildende mittlere Schule ohne Matura (z. B. Handelsschule)
- Allgemeinbildende oder berufsbildende höhere Schule mit Matura
- Universitätsabschluss
- Sonstiges: \_\_\_\_\_

**Wie alt sind Sie?**

**Wie ist Ihr Familienstand?**

- Ledig
- in einer Beziehung
- Verheiratet oder eingetragene Partnerschaft
- Verwitwet oder hinterbliebene eingetragene Partnerschaft
- Geschieden oder aufgelöste eingetragene Partnerschaft

**Was hat Ihnen besonders gut gefallen?**

**Was ich noch sagen möchte / Weitere Wünsche oder Anregungen**

**Hätten Sie auch freiwillig an diesem Vortrag teilgenommen?**

- Nein
- Eher nicht
- Teils/Teils
- Eher schon
- Ja

**Appendix 7**

Two-week follow up questionnaire

**Fragebogen 3****Heutiges Datum:** \_\_\_\_\_

Jeder Mensch hat bestimmte Vorstellungen davon, wie das Leben im Alter aussieht. Im Folgenden werden wir Ihnen Fragen zum Alter, dem Älterwerden und zu Veränderungen, die mit dem Alter einhergehen können, stellen. Zuerst finden Sie hier einige Aussagen zu Veränderungen, die man in jedem Alter erleben kann. Bitte geben Sie an, inwiefern Sie diese Veränderungen erleben.

**Mit zunehmendem Alter bemerke ich, dass ...**

...ich Beziehungen und andere Menschen wesentlich mehr schätze.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

...meine geistige Leistungsfähigkeit abnimmt.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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...ich meiner Gesundheit mehr Aufmerksamkeit widme.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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...ich meine Aktivitäten einschränken muss.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

...ich mehr Erfahrung und Wissen habe, um Dinge und Menschen einzuschätzen.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

**Mit zunehmendem Alter bemerke ich, dass ...**

... ich ein besseres Gespür dafür habe, was mir wichtig ist.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... ich weniger Energie habe.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... ich mich mehr von der Hilfe anderer abhängig fühle.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... ich mehr Freiheit habe, meine Tage so zu erleben, wie ich will.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... es mir schwerer fällt, mich zu motivieren.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

Alle Menschen werden älter. Das Älterwerden ist mit Veränderungen in vielen Lebensbereichen verbunden. Bitte lesen Sie nun, die untenstehenden Aussagen und geben an, inwieweit diese Veränderungen aus Ihrer Sicht typisch sind für das Älterwerden im Allgemeinen. Denken Sie hierbei nur daran, wie die meisten Menschen normalerweise älter werden.

Bitte geben Sie für jede der folgenden Aussagen an, wie gut diese Ihrer Meinung nach zutrifft.

### Älterwerden bedeutet für die meisten Menschen, ...

... dass sie nicht mehr so belastbar sind.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... dass sie körperliche Einbußen schlechter ausgleichen können.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... dass sie weniger vital und fit sind.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... dass ihr Gesundheitszustand schlechter wird.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
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**Älterwerden bedeutet für die meisten Menschen, ...**

... dass sie nicht mehr so recht gebraucht werden.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... dass sie sich mit der Zeit häufiger langweilen.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... dass sie weniger respektiert werden.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... dass sie sich häufiger einsam fühlen.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... dass sie weiterhin viele Pläne machen.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

... dass sie in der Lage sind, neue Dinge zu lernen.

stimme gar nicht zu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stimme voll und ganz zu
---------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

**Älterwerden bedeutet für die meisten Menschen, ...**

... dass sie weiterhin viele Ideen realisieren können.

stimme  
gar nicht zu         stimme  
voll und  
ganz zu

... dass sich ihre Fähigkeiten erweitern.

stimme  
gar nicht zu         stimme  
voll und  
ganz zu

**Einmal abgesehen von Ihrem tatsächlichen Alter:**

Wenn Sie es in Jahren ausdrücken sollen, wie alt fühlen Sie sich?

Was glauben Sie, wie viele Jahre Sie vielleicht alt werden?

Ab welchem Alter würden Sie jemanden als alt bezeichnen?

Sie haben bestimmt auch schon einmal gehört, dass jemand sagt, er wäre gerne jünger oder älter, als er nach Jahren ist. Wenn Sie sich vorstellen, Sie könnten sich Ihr Alter aussuchen: Wie alt möchten Sie jetzt sein?

## 5 Fragen zu Ihrem Gesundheitszustand

Wie bewerten Sie Ihren derzeitigen Gesundheitszustand?

- Sehr schlecht
- Schlecht
- Mittel
- Gut
- Sehr gut

Wie hat sich Ihr Gesundheitszustand in den letzten 6/10 Jahren verändert?

- Ist viel schlechter geworden
- Ist etwas schlechter geworden
- Ist gleich geblieben
- Ist etwas besser geworden
- Ist viel besser geworden

Wenn Sie an Ihre Gesundheit vor 6/10 Jahren denken: Wie war Ihr damaliger Gesundheitszustand?

- Sehr schlecht
- Schlecht
- Mittel
- Gut
- Sehr gut

Was erwarten Sie, wie wird sich Ihr Gesundheitszustand in Zukunft verändern?

- Wird viel schlechter werden
- Wird etwas schlechter werden
- Wird gleich bleiben
- Wird etwas besser werden
- Wird viel besser werden

Wie bewerten Sie Ihren Gesundheitszustand im Vergleich zur Gesundheit von anderen Menschen Ihres Alters?

- Viel schlechter
- Etwas schlechter
- Gleich
- Etwas besser
- Viel besser

**Wie blicken Sie auf Ihr Leben im hohen Alter?**

Ich habe Angst, dass meine Freund\*innen in meinem hohen Alter nicht mehr am Leben sein werden.

stimme gar  
nicht zu

stimme voll  
und ganz  
zu

Ich habe Angst, dass es mir schwerfallen wird, im hohen Alter Zufriedenheit zu finden.

stimme gar  
nicht zu

stimme voll  
und ganz  
zu

Je älter ich werde, desto mehr Sorge ich mich um meine Gesundheit.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Auch im hohen Alter werde ich genug zu tun haben, um mich zu beschäftigen.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich werde nervös, wenn ich daran denke, dass im hohen Alter jemand anderes für mich Entscheidungen treffen könnte.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich erwarte, dass sich das Leben auch im hohen Alter gut anfühlen wird.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich mache mir Sorgen, dass die Menschen mich ignorieren werden, wenn ich sehr alt bin.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich glaube, dass ich auch im hohen Alter noch in der Lage sein werde, die meisten Dinge selbstständig zu erledigen.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich habe Angst, dass das Leben an Bedeutung verlieren wird, wenn ich sehr alt werde.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

Ich erwarte, dass ich mich im hohen Alter, genauso wie ich bin, wohlfühlen werde.

stimme gar  
nicht zu

stimme  
voll und  
ganz zu

**Wie oft haben Sie Kontakt zu jüngeren Personen (z. B. Besuche, Telefonate, Nachrichten)?**

- täglich
- mehrmals pro Woche
- einmal pro Woche
- ein- bis dreimal im Monat
- mehrmals im Jahr
- seltener
- nie

**Wie oft haben Sie Kontakt zu Personen mittleren Alters (z. B. Besuche, Telefonate, Nachrichten)?**

- täglich
- mehrmals pro Woche
- einmal pro Woche
- ein- bis dreimal im Monat
- mehrmals im Jahr
- seltener
- nie

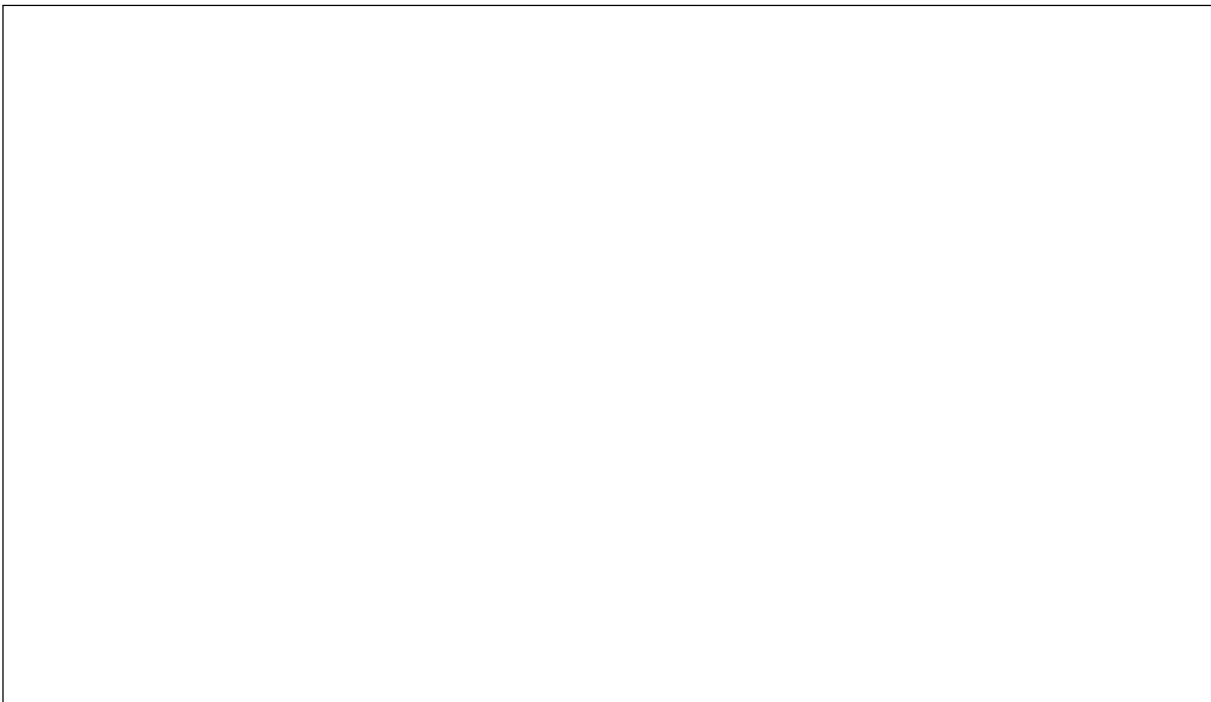
**Wie oft haben Sie Kontakt zu älteren Personen (z. B. Besuche, Telefonate, Nachrichten)?**

- täglich
- mehrmals pro Woche
- einmal pro Woche
- ein- bis dreimal im Monat
- mehrmals im Jahr
- seltener
- nie

**Bitte denken Sie jetzt an den Vortrag zurück. Nennen Sie drei Lieblingsfakten des Vortrags. Falls Sie keine Lieblingsfakten haben, schreiben Sie „Sonne“ in das Feld.**



**Hatten Sie seit dem Vortrag Momente in Ihrem Alltag, die Sie an den Vortrag erinnert haben? Wenn ja, welche? Falls Sie keine Momente haben, schreiben Sie „Mond“ in das Feld.**



**Fragen zu Veränderungen seit dem Vortrag**

Haben Sie seit dem Vortrag Veränderungen in Bezug auf Ihre Gesundheit beobachtet?

- nein
- eher nicht
- weiß nicht
- eher schon
- ja

Haben Sie seit dem Vortrag Veränderungen in Ihren sozialen Beziehungen beobachtet?

- nein
- eher nicht
- weiß nicht
- eher schon
- ja

Haben Sie seit dem Vortrag Veränderungen Ihrer Einstellungen zum Altern beobachtet?

- nein
- eher nicht
- weiß nicht
- eher schon
- ja

Welche Veränderungen in Bezug auf Ihre Gesundheit haben Sie beobachtet? Falls Sie keine Veränderungen in diesem Bereich beobachtet haben, schreiben Sie „Licht“ in das Feld.

Welche Veränderungen haben Sie in Ihren sozialen Beziehungen beobachtet? Falls Sie keine Veränderungen in diesem Bereich beobachtet haben, schreiben Sie „Planet“ in das Feld.

Welche Veränderungen in Ihren Einstellungen zum Altern haben Sie beobachtet? Falls Sie keine Veränderungen in diesem Bereich beobachtet haben, schreiben Sie „Wasser“ in das Feld.

Was ich noch sagen möchte:


**Appendix 8**

Presentation slides



Altersbilder

# Denkt an eine alte Person & notiert, die ersten 5 Wörter, die euch einfallen



SEITE 1

Themen



**Gesundheit**                      **soziale Beziehungen**                      **Einstellungen**

SEITE 2

Altersbilder

# Wer ist eigentlich alt? und was heißt das?

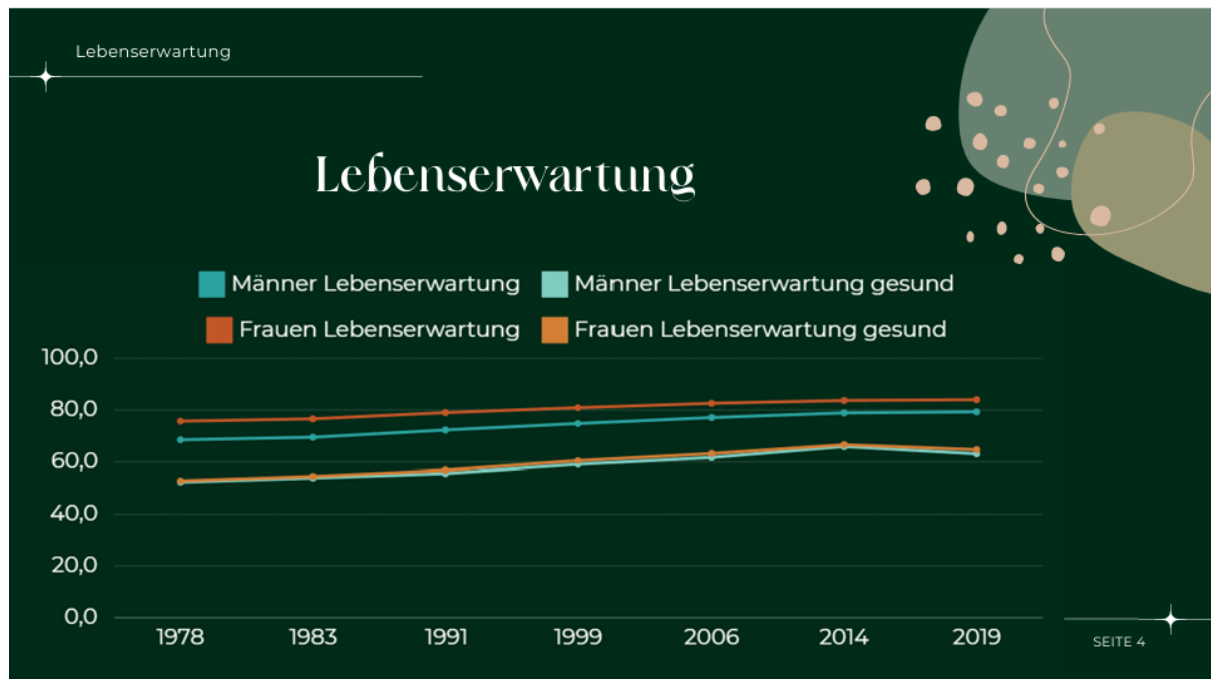
30 Stunden im Wasser:  
60-Jährige durchschwimmt  
erfolgreich Bodensee  
ZIB

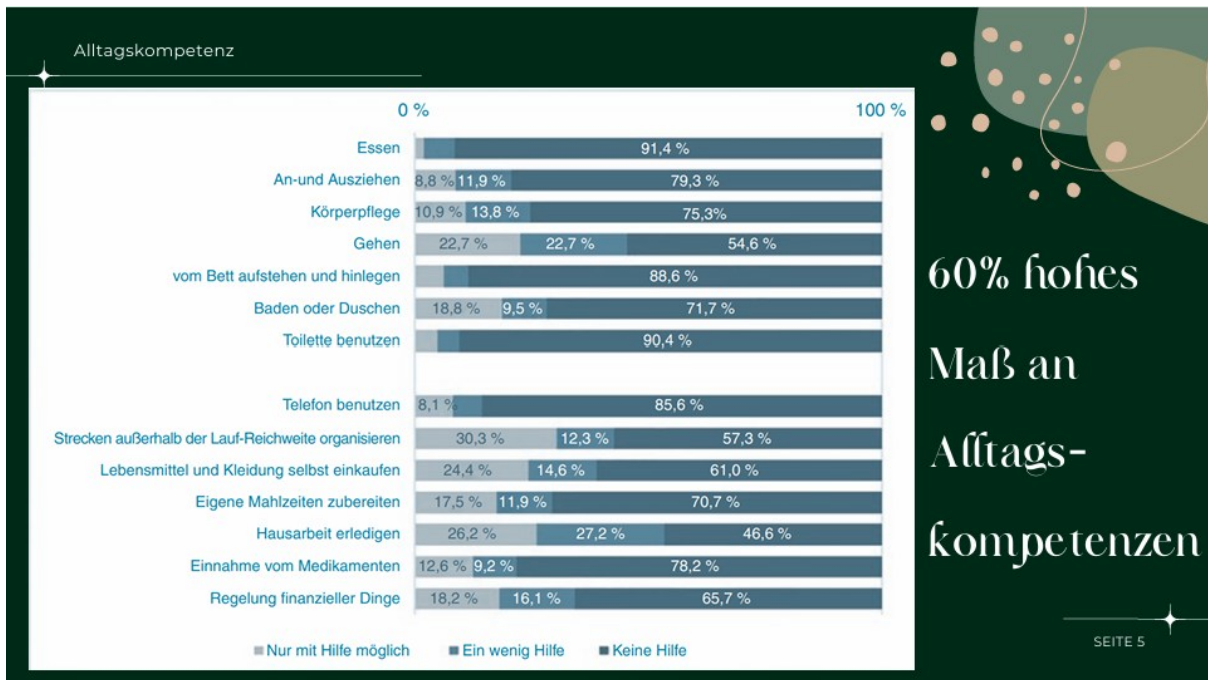
92

94

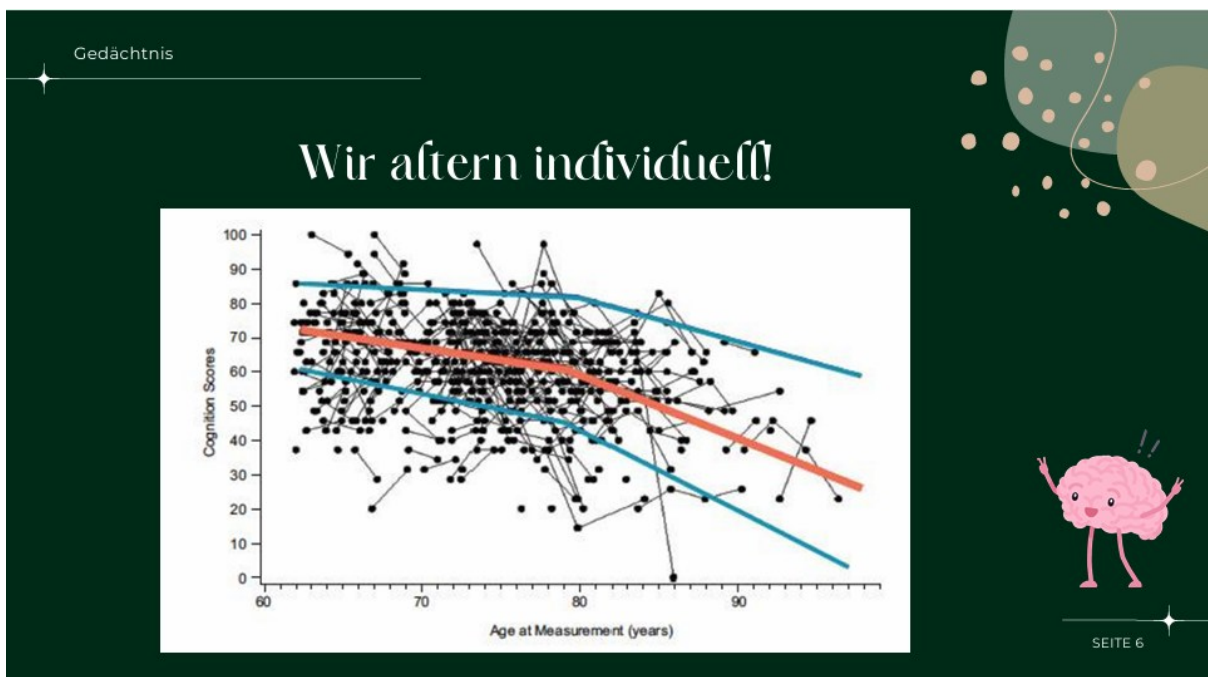
89

SEITE 3





60% hohes Maß an Alltagskompetenzen



Denken

- Verarbeitungsgeschwindigkeit
- Arbeitsgedächtnis
- Wissen
- Lesen & Schreiben
- Lebenserfahrung

SEITE 7

Gedächtnistest

# Gedächtnistests

**Mini-Mental-Status-Test (MMST)**

Der MMST enthält anhand eines einfachen Fragebogens eine Abschätzung der kognitiven Fähigkeiten eines älteren Menschen. Die Testzeit beträgt ca. 10 Minuten. Ergebnisse (Punkte) mit weniger als 13 Punkten, werden globale kognitive Störungen angenommen und die Voraussetzungen für das Kompetenzurteil können fraglich werden.

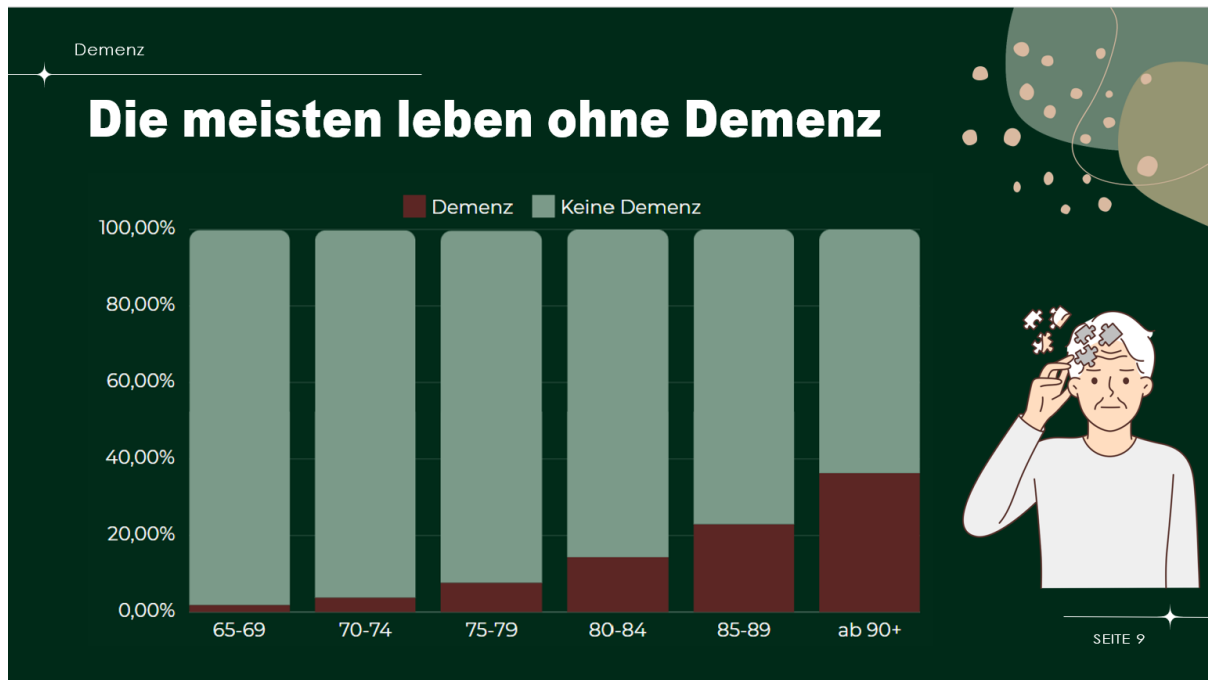
Testperson: \_\_\_\_\_ Geburtsdatum: \_\_\_\_\_

Datum der Erhebung: \_\_\_\_\_ Erhebung wurde durchgeführt von: \_\_\_\_\_

I. Orientierung		Punkte	
(1) Datum	0	1	0
(2) Jahr	1	1	0
(3) Adventzeit	1	1	0
(4) Welchen Tag haben wir heute?	1	1	0
(5) Wochentag	1	1	0
(6) Monat	1	1	0
(7) Jahreszeit	1	1	0
(8) Land/Ort/Stadt	1	1	0
(9) Straße/Platzname	1	1	0
(10) Name/Übernahme	1	1	0
Summe Items: 10			
II. Hörverständnis		Summe Items: 3/3	
(11) Apfel	1	1	0
(12) Pfirsich	1	1	0
(13) Tisch	1	1	0
Summe Items: 3/3			
III. Aufmerksamkeit und Rechenfertigkeit		Summe Items: 5/5	
(14) > 100 + 1	1	1	0
(15) > 100 - 1	1	1	0
(16) > 20 + 1	1	1	0
(17) > 20 - 1	1	1	0
(18) > 100 + 5	1	1	0
(19) > 100 - 5	1	1	0
Summe Items: 5/5			
IV. Erinnerungsfähigkeit		Summe Items: 3/3	
(20) Apfel	1	1	0
(21) Pfirsich	1	1	0
(22) Tisch	1	1	0
Summe Items: 3/3			

Quelle: Alzheimer Psychologie, 2. Auflage, © 1999 Springer

SEITE 8




Demenz

## Viele bemerken Demenz NICHT

SEITE 10

Demenz

# Nonnenstudie



SEITE 11

Demenz

## Einflussfaktoren

weniger kontrollierbar	kontrollierbar
Krankheit	Umwelt
frühe Bildungsprozesse	Beruf
Genetik, Alterungsprozess	Bewegung
	Weiterbildung
	Partner, neue Aufgaben, Training, negativen Stereotypen widerstehen



soziale Beziehungen

**Wer möchte wissen was der  
Schlüssel für ein glückliches  
Leben ist?**

SEITE 14

The text is centered on a dark green background with decorative light-colored circles in the top right. The text is in white, with the main question in a larger, bold font.

soziale Beziehungen

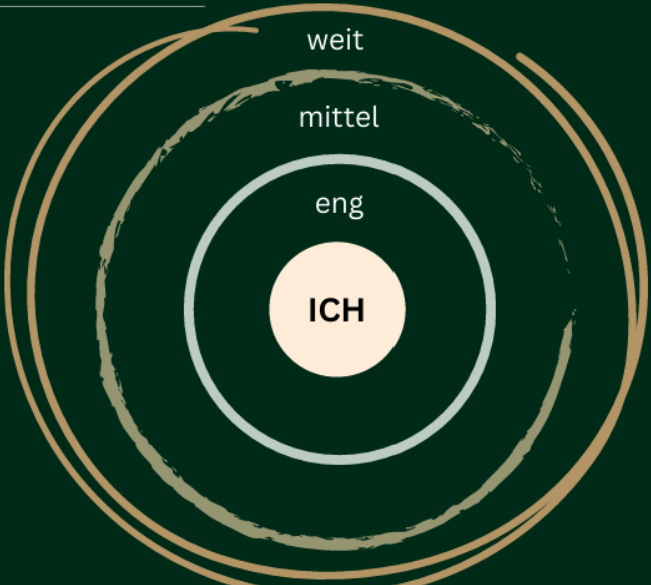


soziale Beziehungen

SEITE 15

The slide features a dark green background with a network diagram of five stylized human figures. One central figure is connected to four surrounding figures by lines. The text 'soziale Beziehungen' is written in a white serif font, appearing twice: once at the top left and once below the diagram. A decorative graphic of overlapping circles and dots is in the top right corner. A small star icon is in the top left, and the text 'SEITE 15' is in the bottom right.

soziale Beziehungen



weit  
mittel  
eng  
ICH

SEITE 16

The slide features a dark green background with a diagram of four concentric circles. The innermost circle is labeled 'ICH'. The next ring is labeled 'eng', the middle ring is labeled 'mittel', and the outermost ring is labeled 'weit'. The text 'soziale Beziehungen' is written in a white serif font at the top left. A decorative graphic of overlapping circles and dots is in the top right corner. A small star icon is in the top left, and the text 'SEITE 16' is in the bottom right.



Allein vs. Einsam

Alleinsein ≠ Einsamkeit

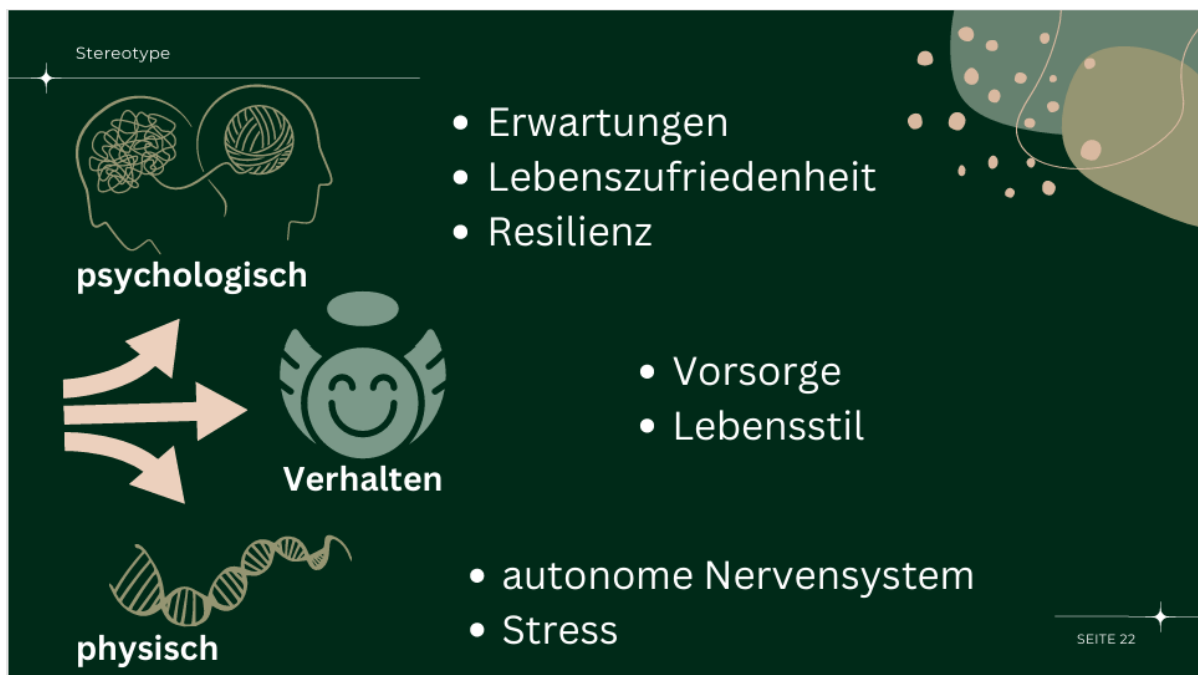
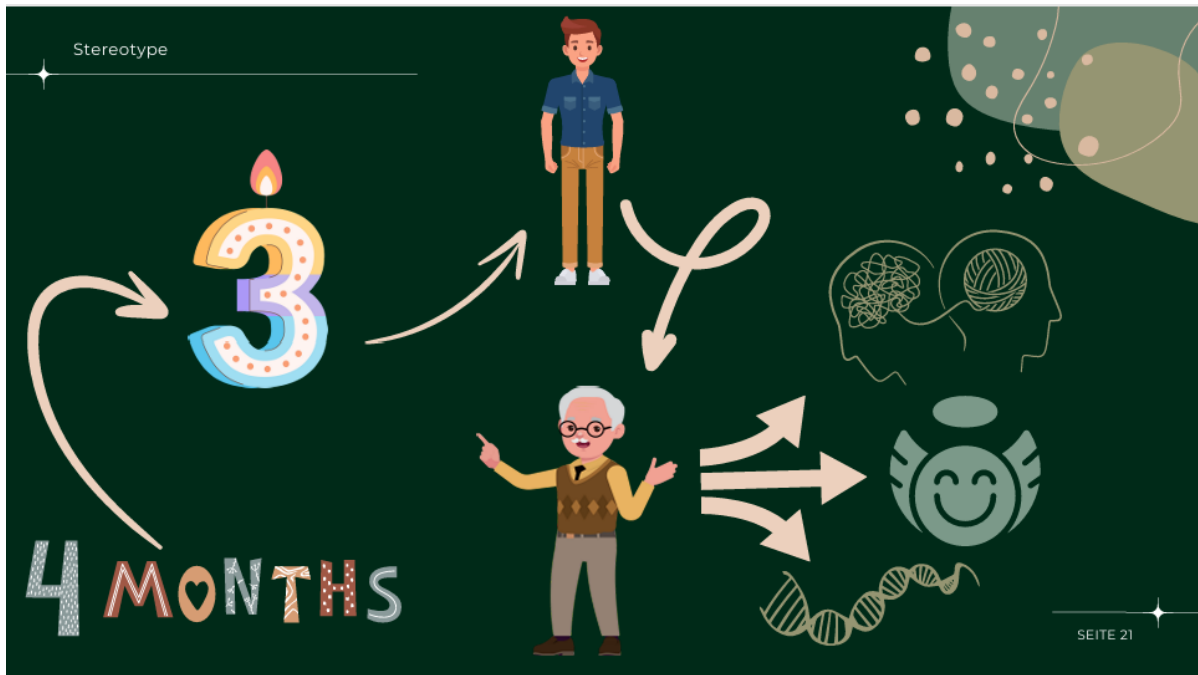
SEITE 18

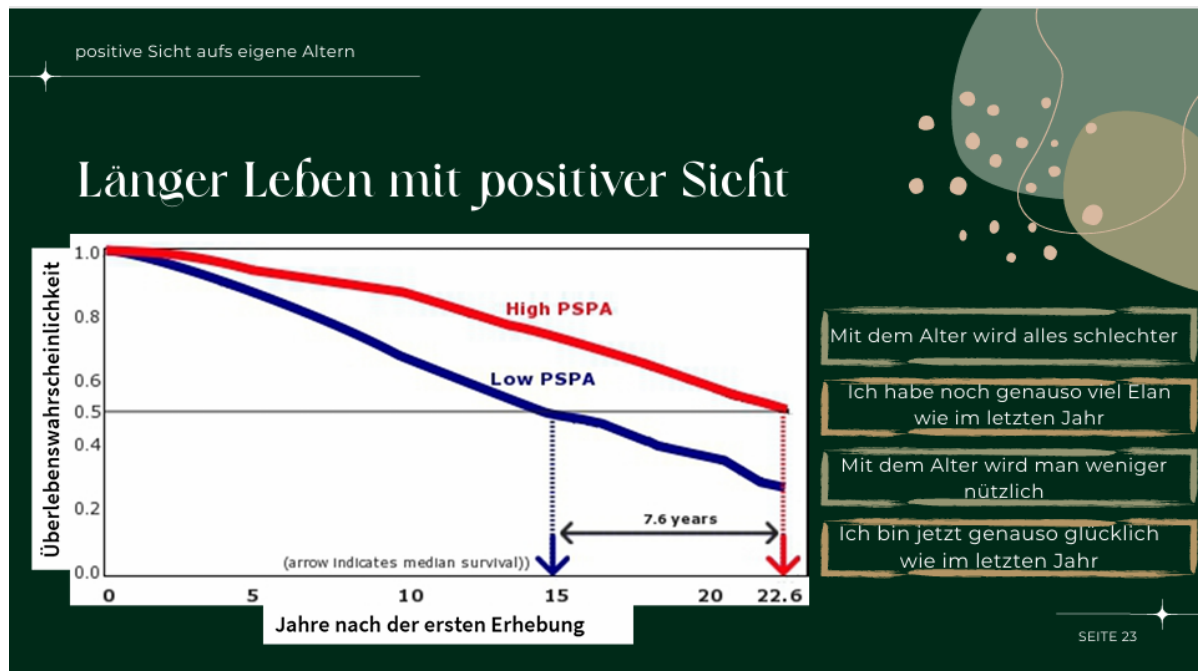
soziale Beziehungen

- Neue Aktivitäten probieren!
- Zeit alleine genießen!
- Freundschaften zu jüngeren & älteren Personen schließen!
- Soziale Kontakte pflegen!

SEITE 19

EINSTELLUNGEN





Selbstwahrnehmung eigenes Altern

## Sichtweise eigenes Altern

### AUSWIRKUNGEN


- Sterblichkeit / 7,5 Jahre
- physische Gesundheit
- Lebenszufriedenheit
- Fettleibigkeit
- Depression
- Denk-Fähigkeiten
- demenzielle Veränderungen
- Resilienz

verinnerlichte Altersbilder

SEITE 24

Altersbilder

## Auswirkungen negative Altersbilder



**Kurzfristig:**

- unsicherere Handschrift
- Verschlechterung von Haltung und Gleichgewicht
- schlechtere Gedächtnisleistungen

**Langfristig:**

- ↑ Hospitalisierung
- ↓ Erholung von Behinderung
- ↑ Hörverlust

SEITE 25

Einstellungen

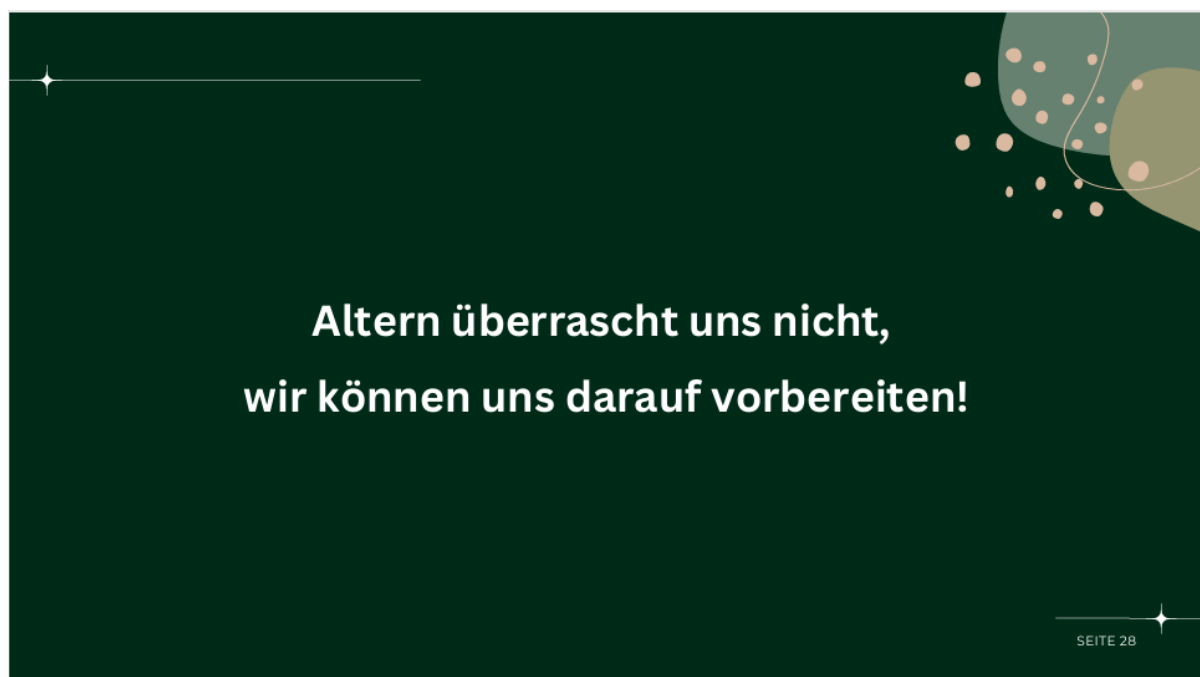
Altersbilder hinterfragen!

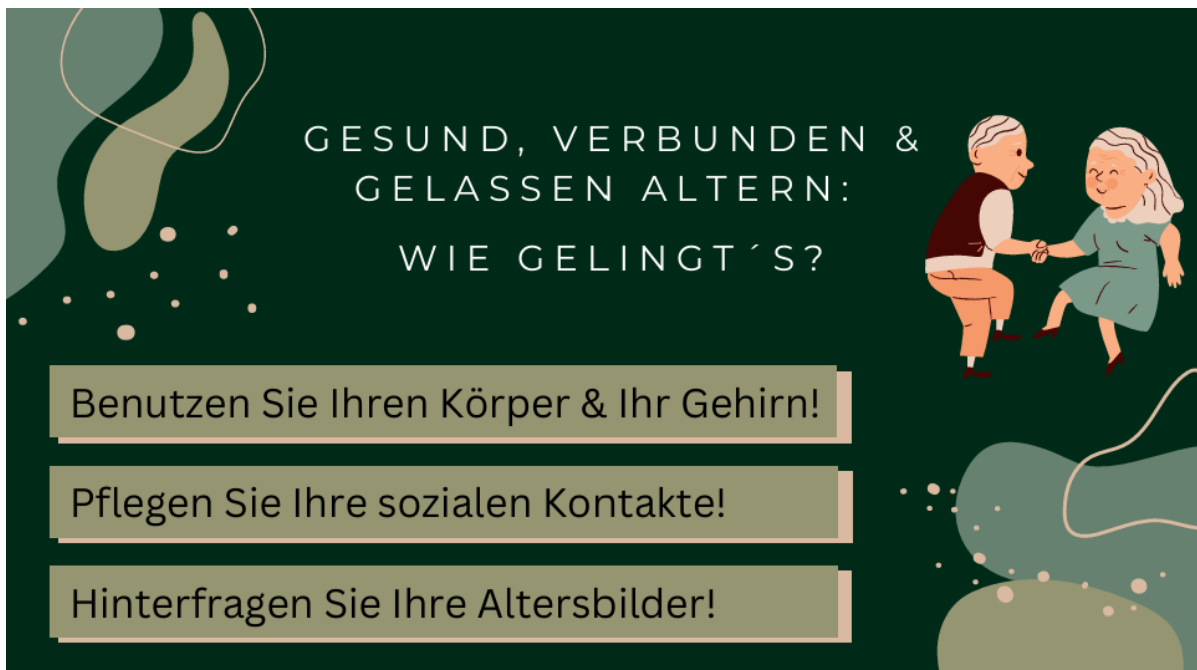
Andere Erklärungen suchen & finden!

Positive Rollenbilder suchen!

Kontakt zu Personen in einem anderen Alter!

SEITE 26





GESUND, VERBUNDEN &  
GELASSEN ALTERN:  
WIE GELINGT ´S?

Benutzen Sie Ihren Körper & Ihr Gehirn!

Pflegen Sie Ihre sozialen Kontakte!

Hinterfragen Sie Ihre Altersbilder!

Fragebogen

Herzlichen Dank fürs Zuhören

Fragebogen 2  
AUSFÜLLEN

SEITE 30

**Appendix 9**

German wording of all items asked and corresponding recoding if necessary

<b>Variables and questionnaires</b>	<b>Items</b>	<b>Answer format and recoding</b>
<b>Self-perceptions of aging</b>	<b>Mit zunehmendem Alter bemerke ich, dass ...</b>	
<i>Gain-related awareness of age-related change (Q1, Q2, Q3)</i>	1) ... ich Beziehungen und andere Menschen wesentlich mehr schätze. (INT +) 3) ... ich meiner Gesundheit mehr Aufmerksamkeit widme. (PHYS +) 5) ... ich mehr Erfahrung und Wissen habe, um Dinge und Menschen einzuschätzen. (COG +) 6) ... ich ein besseres Gespür dafür habe, was mir wichtig ist. (SCSE +) 9) ... ich mehr Freiheit habe, meine Tage so zu erleben, wie ich will. (LIFE +)	1 = stimme gar nicht zu 7 = stimme voll und ganz zu To build a scale score the mean of the items was created if at least 67% of the items had valid responses. Which means participants had to answer 4 out of the 5 items to build the gain-oriented awareness of age-related change score. Higher scores indicate more gain-oriented self-perceptions of aging. Minimum score = 1, Maximum score = 7
<i>Loss-oriented awareness of age-related change (Q1, Q2, Q3)</i>	2) ... meine geistige Leistungsfähigkeit abnimmt. (COG -) 4) ... ich meine Aktivitäten einschränken muss. (LIFE -)	1 = stimme gar nicht zu 7 = stimme voll und ganz zu To build a scale score the mean of the items was created if at least 67% of the items had valid

Variables and questionnaires	Items	Answer format and recoding
	7) ... ich weniger Energie habe. (PHYS -) 8) ... ich mich mehr von der Hilfe anderer abhängig fühle. (INT -) 10) ... es mir schwer fällt mich zu motivieren. (SCSE -)	responses. Which means participants had to answer 4 out of the 5 items to build the loss-oriented awareness of age-related change score. Higher scores indicate more loss-oriented self-perceptions of aging. Minimum score = 1, Maximum score = 7
<b>Age Stereotypes</b>	<b>Älterwerden bedeutet für die meisten Menschen, ...</b>	
<i>Physical loss age stereotypes</i> (Q1, Q2, Q3)	1) ... dass sie nicht mehr so belastbar sind. 2) ... dass sie körperliche Einbußen schlechter ausgleichen können. 3) ... dass sie weniger vital und fit sind. 4) ... dass ihr Gesundheitszustand schlechter wird.	1 = stimme gar nicht zu 7 = stimme voll und ganz zu To build a scale score the mean of the items was created if at least 67% of the items had valid responses. Which means participants had to answer 3 out of 4 items to build the physical losses age stereotypes score.
<i>Social loss age stereotypes</i> (Q1, Q2, Q3)	5) ... dass sie nicht mehr so recht gebraucht werden. 6) ... dass sie sich mit der Zeit häufiger langweilen.	1 = stimme gar nicht zu 7 = stimme voll und ganz zu

Variables and questionnaires	Items	Answer format and recoding
	7) ... dass sie weniger respektiert werden. 8) ... dass sie sich häufiger einsam fühlen.	To build a scale score the mean of the items was created if at least 67% of the items had valid responses. Which means participants had to answer 3 out of 4 items to build the social losses age stereotypes score.
<i>Ongoing development age stereotypes</i> (Q1, Q2, Q3)	9) ... dass sie weiterhin viele Pläne machen. 10) ... dass sie weiterhin in der Lage sind, neue Dinge zu lernen. 11) ... dass sie weiterhin viele Ideen realisieren können. 12) ... dass sich ihre Fähigkeiten erweitern.	1 = stimme gar nicht zu 7 = stimme voll und ganz zu To build a scale score the mean of the items was created if at least 67% of the items had valid responses. Which means participants had to answer 3 out of 4 items to build the ongoing development score age stereotypes score.
<b>Subjective age</b>	Einmal abgesehen von Ihrem tatsächlichen Alter:	Open answer format; Following answers were recoded:
<i>Felt Age</i> (Q1, Q2, Q3)	1) Wenn Sie es in Jahren ausdrücken sollen, wie alt fühlen Sie sich?	<b>Q1:</b> >100 = 100 ~25-34 = 30 ALT = Missing

Variables and questionnaires	Items	Answer format and recoding
		<p><b>Q2:</b></p> <p>&gt;100 = 100</p> <p>30+ = 30</p> <p>? = Missing</p> <p><b>Q3:</b></p> <p><b>150 = ???</b></p> <p>Manchesmall 40 oder 60 jahre = 50</p>
<p><i>Death age</i> (Q1, Q2, Q3)</p>	<p>2) Was glauben Sie, wie viele Jahre sie vielleicht alt werden?</p>	<p><b>Q1:</b></p> <p>90+ = 90</p> <p>83? = 83</p> <p>75 max. = 75</p> <p>60-70 = 65</p> <p>88? = 88</p> <p>~89 = 89</p> <p>50-70 = 60</p> <p><b>Unendlich = Missing</b></p> <p><b>Kein Thema für mich = Missing</b></p> <p><b>k. A. unseriöse Frage! = Missing</b></p>

Variables and questionnaires	Items	Answer format and recoding
		<p><b>Q2:</b></p> <p>~85 = 85</p> <p>50-70 = 60</p> <p>88? = 88</p> <p>50-60 max = 55</p> <p>70+ = 70</p> <p>85+ = 85</p> <p>&lt;80 = 80</p> <p>80+ = 80</p> <p>90? = 90</p> <p>?? = Missing</p> <p>? = Missing</p> <p>/ = Missing</p> <p><b>Q3:</b></p> <p>60+ = 60</p> <p>40-50 = 45</p> <p>80? 85? 90? = 85</p> <p>keine Ahnung = Missing</p>

Variables and questionnaires	Items	Answer format and recoding
		? = Missing <b>320 = ???</b>
<i>Old age</i> (Q1, Q2, Q3)	3) Ab welchem Alter würden Sie jemanden als alt bezeichnen?	<b>Q1:</b> 70+ = 70 87? = 87 70-75 = 73 70+ = 70 ~60 = 60 90-100 = 95 9. aber eigentl. Nie :) = 90 wenn er/sie die FPÖ wählt = Missing KA = Missing unterschiedlich von Person zu Person = Missing sehr differenziert = Missing <b>1x nie = Missing</b> k. A. unseriöse Frage! = Missing unterschiedlich = Missing jetzt = Age

Variables and questionnaires	Items	Answer format and recoding
		<p><b>Q2:</b></p> <p>&gt;70 = 70</p> <p>90 eig. gar nicht = 90</p> <p>88-90 = 89</p> <p>75+ = 75</p> <p>90-100 = 95</p> <p>sobald er die FPÖ ankreuzt = Missing</p> <p>KA (Kontext basierend) = Missing</p> <p>2x nie = Missing</p> <p>k.A. = Missing</p> <p>kommt auf die Person an = Missing</p> <p>kein bestimmtes Alter = Missing</p> <p>Bei sichtlicher Altersschwäche = Missing</p> <p>? = Missing</p> <p><b>Q3:</b></p> <p>18-20 = 19</p> <p>Individuel = Missing</p> <p>KA = Missing</p>

Variables and questionnaires	Items	Answer format and recoding
		immer noch wenn er die FPÖ wählt! :) = Missing 80-90 = 85
<i>Wished age</i> (Q1, Q2, Q3)	4) Sie haben bestimmt auch schon einmal gehört, dass jemand sagt, er wäre gern jünger oder älter, als er nach Jahren ist. Wenn Sie sich vorstellen, Sie könnten sich Ihr Alter aussuchen: Wie alt möchten Sie jetzt sein?	<b>Q1:</b> 35-40 = 38 mein Alter ist ideal = Age Anfang 30/Ende 20 = 30 so alt wie ich bin = Age kein Thema = Missing sehr differenziert = Missing jetzt = Age ? = Missing <b>Q2:</b> 65 (wie jetzt) = 65 ~30 = 30 so alt wie ich bin = Age 32-40 = 36 JETZT! = Age ? = Missing

Variables and questionnaires	Items	Answer format and recoding
		<b>Q3:</b> kein Thema = Missing so wie ich jetzt bin = Age
<i>Subjective Health</i> (Q1, Q2, Q3)	<ul style="list-style-type: none"> <li>- Wie bewerten Sie Ihren derzeitigen Gesundheitszustand?</li> <li>- Wie hat sich Ihr Gesundheitszustand in den letzten 6/10 Jahren verändert?</li> <li>- Wenn Sie an Ihre Gesundheit vor 6/10 Jahren denken: Wie war Ihr damaliger Gesundheitszustand?</li> <li>- Was erwarten Sie, wie wird sich Ihr Gesundheitszustand in Zukunft verändern?</li> <li>- Wie bewerten Sie Ihren Gesundheitszustand im Vergleich zur Gesundheit von anderen Menschen Ihres Alters?</li> </ul>	1 = Sehr schlecht / Ist viel schlechter geworden / Wird viel schlechter werden / Viel schlechter 2 = Schlecht / Ist etwas schlechter geworden / wird etwas schlechter werden / etwas schlechter 3 = Mittel / Ist gleich geblieben / Wird gleich bleiben / Gleich 4 = Gut / Ist etwas besser geworden / Wird etwas besser werden / Etwas besser 5 = Sehr gut / Ist viel besser geworden / Wird viel besser werden / Viel besser
<b>Aging Anxiety</b>	Wie blicken Sie auf Ihr Leben im hohen Alter?	
<i>Psychological concern</i> (Q1, Q2, Q3)	2) Ich habe Angst, dass es mir schwerfallen wird, im hohen Alter Zufriedenheit zu finden. (item 5, -)	1 = stimme gar nicht zu 7 = stimme voll und ganz zu

Variables and questionnaires	Items	Answer format and recoding
	<p>4) Auch im hohen Alter werde ich genug zu tun haben, um mich zu beschäftigen. (item 7, +)</p> <p>6) Ich erwarte, dass sich das Leben auch im hohen Alter gut anfühlen wird. (item 11, +)</p> <p>8) Ich glaube, dass ich auch im hohen Alter noch in der Lage sein werde, die meisten Dinge selbstständig zu erledigen. (item 16, +)</p> <p>10) Ich erwarte, dass ich mich im hohen Alter, genauso wie ich bin, wohlfühlen werde. (item 18, +)</p>	<p>To build a scale score the mean of the items was created if at least 67% of the items had valid responses. Which means participants had to answer 4 out of 5 items to build the psychological concern aging anxiety score.</p> <p>Item 2 was recoded:</p> <p>1 = 7</p> <p>2 = 6</p> <p>3 = 5</p> <p>5 = 3</p> <p>6 = 2</p> <p>7 = 1</p>
<i>Fear of losses</i>	<p>1) Ich habe Angst, dass meine Freun*innen in meinem hohen Alter nicht mehr am Leben sein werden. (original item 2, -)</p> <p>3) Je älter ich werde, desto mehr Sorge ich mich um meine Gesundheit. (item 6, +/-)</p>	<p>1 = stimme gar nicht zu</p> <p>7 = stimme voll und ganz zu</p> <p><b>ITEM 3 can be interpreted both as negative or positive!!!!</b></p>

Variables and questionnaires	Items	Answer format and recoding
	<p>5) Ich werde nervös, wenn ich daran denke, dass im hohen Alter jemand anders für mich Entscheidungen treffen könnte. (item 8, -)</p> <p>7) Ich mache mir Sorgen, dass die Menschen mich ignorieren werden, wenn ich sehr alt bin. (item 14, -)</p> <p>9) Ich habe Angst. Dass das Leben an Bedeutung verlieren wird, wenn ich sehr alt werde. (item 17, -)</p>	
<p><i>Motivation to participate (Q1)</i></p>	<p>Was war Ihre Motivation heute an diesem Vortrag teilzunehmen? (Mehrfachantwort möglich!)</p> <ul style="list-style-type: none"> <li>- Ich möchte die Vortragende unterstützen.</li> <li>- Das Thema interessiert mich.</li> <li>- Das Thema hat berufspraktische Relevanz für mich.</li> <li>- Der Termin hat gut in meinen Kalender gepasst.</li> <li>- Ich möchte zur Forschung beitragen.</li> </ul>	<p>Items were dummy coded: 0 = participant did not tick box 1 = participant did tick box</p>

Variables and questionnaires	Items	Answer format and recoding
	<ul style="list-style-type: none"> <li>- Ich wollte an einem sozialen Event teilnehmen.</li> <li>- Ich bin gemeinsam mit befreundeten Personen/Familienmitgliedern hier.</li> <li>- Sonstiges, bitte spezifizieren:</li> </ul>	
<i>Expectation</i> (Q1)	1) Was erwarten Sie von dem Vortrag? 2) Was könnte im besten Fall passieren? 3) Was könnte im schlechtesten Fall passieren?	Open answer format
<i>Contact to age groups</i> (Q2)	<ul style="list-style-type: none"> <li>- Wie oft haben sie Kontakt zu jüngeren Personen (z.B. Besuche, Telefonate, Nachrichten)?</li> <li>- Wie oft haben sie Kontakt zu Personen mittleren Alters (z.B. Besuche, Telefonate, Nachrichten)?</li> <li>- Wie oft haben sie Kontakt zu älteren Personen (z.B. Besuche, Telefonate, Nachrichten)?</li> </ul>	1 = täglich 2 = mehrmals pro Woche 3 = einmal pro Woche 4 = ein- bis dreimal im Monat 5 = mehrmals im Jahr 6 = seltener 7 = nie
<i>Lecture</i> (Q2)	- Hätten Sie an diesem Vortrag auch teilgenommen, wenn er online stattgefunden hätte?	1 = Nein / Nicht gut 2 = Eher nicht / Eher nicht gut 3 = Vielleicht / Neutral

<b>Variables and questionnaires</b>	<b>Items</b>	<b>Answer format and recoding</b>
	<ul style="list-style-type: none"> <li>- Hätten Sie einen online Vortrag bevorzugt?</li> <li>- Wie gut hat Ihnen der Vortrag gefallen?</li> <li>- Waren Ihnen die Informationen aus dem Vortrag bereits bekannt?</li> <li>- Fanden Sie den Vortrag hilfreich?</li> <li>- Kennen Sie die Vortragende persönlich?</li> </ul>	<p>4 = Eher schon / Eher gut</p> <p>5 = Ja / Sehr gut</p>
<b>Control variables</b>		
<i>Gender</i> (Q2)	Welchem Geschlecht fühlen Sie sich zugehörig?	<p>1 = Männlich</p> <p>2 = Weiblich</p> <p>3 = Divers</p> <p>4 = Keine Angabe</p>
<i>Highest educational attainment</i> (Q2)	Was ist Ihr höchster Bildungsabschluss?	<p>1 = Schule beendet ohne Abschluss</p> <p>2 = noch Schüler*in</p> <p>3 = Volksschulabschluss / Hauptschulabschluss / NMS-Abschluss</p> <p>4 = Abschluss d. Polytechnikum</p> <p>5 = Lehre ohne Matura, Facharbeiter*in</p> <p>6 = Lehre mit Matura</p>

Variables and questionnaires	Items	Answer format and recoding
		<p>7 = Berufsbildende mittlere Schule ohne Matura (Handelsschule)</p> <p>8 = Allgemeinbildende oder berufsbildende höhere Schule mit Matura</p> <p>9 = Universitätsabschluss</p> <p>Following answers were recoded:</p> <p>Fachhochschule = 9</p> <p>3, 4 = 4</p> <p>3 Jahre Büro = 3</p> <p>3, 5 = 5</p> <p>4, 5 = 5</p> <p>1, 4 = 4</p> <p>Lehre = 5</p> <p>Anlehre Zahnarztassistentin = 5</p> <p>Sonderschule = 3</p> <p>Dummy-Variable created:</p> <p>1, 2, 3, 4, 5, 7 = 0 = keine Matura</p> <p>6, 8, 9 = 1 = Matura</p>

Variables and questionnaires	Items	Answer format and recoding
		Then 3 educational levels were calculated: Lowest education = 1, (2), 3 Moderate education = 4, 5, 6, 7, 8 Highest education = 9
<i>Age</i> (Q2)	Wie alt sind Sie?	Open answer format; Answers were centred around the mean age (46.46)
<i>Partnership status</i> (Q2)	Was ist Ihr Familienstand?	1 = Ledig 2 = in einer Beziehung 3 = Verheiratet oder eingetragene Partnerschaft 4 = Verwitwet oder hinterbliebene eingetragene Partnerschaft 5 = Geschieden oder aufgelöste eingetragene Partnerschaft
<i>Liking</i> (Q2)	Was hat Ihnen besonders gut gefallen?	Open answer format
<i>Favorite facts</i> (Q3)	Bitte denken Sie jetzt an den Vortrag zurück. Nennen Sie drei Lieblingsfakten des Vortrags. Falls	Open answer format

Variables and questionnaires	Items	Answer format and recoding
	Sie keine Lieblingsfakten haben, schreiben Sie „Sonne“ in das Feld.	
<i>Moments in everyday life</i> (Q3)	Hatten Sie seit dem Vortrag Momente in Ihrem Alltag, die Sie an den Vortrag erinnert haben? Wenn ja, welche? Falls Sie keine Momente haben, schreiben Sie „Mond“ in das Feld.	Open answer format
<i>Changes since the lecture</i> (Q3)	Haben Sie seit dem Vortrag Veränderungen in Bezug auf Ihre Gesundheit beobachtet Haben Sie seit dem Vortrag Veränderungen in Ihren sozialen Beziehungen beobachtet? Haben Sie seit dem Vortrag Veränderungen Ihrer Einstellungen zum Altern beobachtet?	1 = nein 2 = eher nicht 3 = weiß nicht 4 = eher schon 5 = ja
<i>Changes</i> (Q3)	- Welche Veränderungen in Bezug auf Ihre Gesundheit haben Sie beobachtet? Falls Sie keine Veränderungen in diesem Bereich beobachtet haben, schreiben Sie „Licht“ in das Feld.	Open answer format

Variables and questionnaires	Items	Answer format and recoding
	<ul style="list-style-type: none"> <li>- Welche Veränderungen haben Sie in Ihren sozialen Beziehungen beobachtet? Falls Sie keine Veränderungen in diesem Bereich beobachtet haben, schreiben Sie „Planet“ in das Feld.</li> <li>- Welche Veränderungen in Ihren Einstellungen zum Altern haben Sie beobachtet? Falls Sie keine Veränderungen in diesem Bereich beobachtet haben, schreiben Sie „Wasser“ in das Feld.</li> </ul>	

Note:

*Q1 = questions asked in questionnaire 1; Q2 = questions asked in questionnaire 2; Q3 = questions asked in questionnaire*

**Appendix 10***Erklärung zur Verwendung von Künstlicher Intelligenz (KI)*

Hiermit erkläre ich, dass ich die folgenden KI-Hilfsmittel zur Erstellung meiner Masterarbeit mit dem Titel „Age lecture intervention: age stereotypes & self-perceptions of aging“ verwendet habe. Ich versichere, dass die Kennzeichnung der verwendeten KI-Hilfsmittel vollständig ist, inkl. Verwendungszweck, Produktname, als auch ggfs. Prompts und Outputs des KI-Hilfsmittels. Ich verantworte die Auswahl und die Übernahme sämtlicher Ergebnisse der von mir verwendeten KI-Hilfsmittel vollumfänglich selbst.

<b>Verwendungszweck*</b>	<b>Produktname des KI-Hilfsmittels</b>
<ul style="list-style-type: none"> <li>• Literaturrecherche</li> <li>• statistische Analyse</li> <li>• Tabellen erstellen</li> <li>• Formulierungen</li> <li>• Ausarbeitung der Diskussion</li> </ul>	Chat GPT
Literaturrecherche	Consensus AI
<ul style="list-style-type: none"> <li>• Literaturrecherche</li> <li>• Ausarbeitung der Diskussion</li> </ul>	Anara