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There must be fifty ways to reduce ageism: A theoretical perspective on possible interventions to reduce self- and other-directed ageism among older persons

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Abstract

Ageism is defined as stereotypes, prejudices, and discrimination toward people because of their age. It represents a substantial public health concern given its high prevalence and extensive impact on the health and well-being of older persons. Although interventions to reduce ageism toward older persons among younger persons as agents of ageism exist, much less is known about interventions to reduce self- and other-directed ageism toward older persons among older persons. This theoretical paper addresses the gap by proposing a comprehensive framework for the development of interventions to reduce ageism among older persons in the second half of life. Drawing on established theories, such as contact theory, terror management theory, stereotype embodiment theory, and social identity theory, we propose various mechanisms through which ageism among older persons can be reduced. The paper explores theoretical assumptions about which interventions work for whom and why to guide further empirical research on the reduction of ageism in the second half of life. We argue that although at the present time, effective interventions to reduce ageism among older persons are scarce, there are many theoretical avenues that may prove effective.

Keywords: theory of change, translational research, subjective age, stereotypes, discrimination, prejudice

"The problem is all inside your head", she said to me

The answer is easy if you take it logically

I'd like to help you in your struggle to be free

There must be fifty ways... *to reduce ageism*

Adapted from "50 ways to leave your lover," written by **Paul Simon**

Ageism, defined as stereotypes, prejudices, and discrimination, is a well-known public health concern of substantial impact on our health, well-being, quality of life, life expectancy and even the economy (Ayalon & Tesch-Römer, 2018; World Health Organization, 2021b). In recognition of its substantial impact on older persons and society at large, ageism was identified by the World Health Organization (WHO) as one of the four pillars of the UN Decade of Healthy Ageing (World Health Organization, 2021a). Despite growing attention to the negative effects of ageism, there is still limited evidence concerning effective interventions to reduce ageism.

Although several systematic reviews have identified educational interventions and intergenerational contact interventions as showing promise in reducing ageist stereotypes and prejudice toward older persons by younger persons (Apriceno & Levy, 2023; Burnes et al., 2019), the evidence is even scarcer in the case of ageism directed by older persons (defined as age 60 and over by the United Nations) toward other older persons (other-directed ageism) or toward themselves (self-directed ageism), defined here as ageism in the second half of life (Ayalon, 2025). To fill this gap, the present paper takes a comprehensive theoretical approach to identify possible interventions to reduce self- and other- directed ageism among older persons.

The negative effects of ageism

Ageism is highly prevalent, affecting about one-third of the European population (Ayalon, 2014) and reported by about half of the world's population (Officer et al., 2020). It is manifested at the institutional level in laws and policies which exclude older persons from fulfilling their full potential, such as mandatory retirement age or triage emergency services based on age (Lagacé et al., 2024; Riva & Petrini, 2021). It is also manifested in interpersonal relationships in the form of jokes which ridicule older age or in the use of condescending, simplified speech style, called elderspeak (Bowd, 2003; Williams et al., 2004). Ageism is also manifested at the intrapersonal level, in the form of internalized negative messages which become self-relevant and thus, self-directed in older age (Levy, 2009).

Although ageism can be directed toward people of all age groups simply because of their age, its most well-known and documented effects concern older persons (Ayalon & Tesch-Römer, 2018). A meta-analysis which examined the negative health effects of ageism concluded that it is present in all 45 countries, across 11 health domains in which it was studied (Chang et al., 2020). Likewise, there is growing evidence linking ageism with social isolation and loneliness as well as with the social exclusion of older persons from a variety of life domains including the workforce, healthcare system, media, and everyday services (Chasteen et al., 2021; Dahlke et al., 2021; Shiovitz-Ezra et al., 2018). Moreover, the financial impact of ageism is substantial. As much as 63 billion USD per year are attributed to the cost of ageism in the US healthcare system (Levy et al., 2018). In the US workforce, 850 billion USD are attributed to ageism (Terrell, 2020).

Ageism in the second half of life

One area which has received substantially less attention is ageism held by older persons toward other older persons. This likely follows an ageist view of older persons simply as victims

of ageism, rather than as possible agents of ageism (Ayalon, 2025; Morrow-Howell, Li, Li, Wininger, Galucia, & Carpenter, 2026). In addition to being victims of ageism, older persons can also be agents of ageism directed toward themselves (self-directed ageism) and toward other older persons (other-directed ageism) (i.e., ageism in the second half of life) (Ayalon & Tesch-Römer, 2017; Levy, 2009). For instance, other-directed ageism is evident when older persons refrain from going to an adult day care center in order not to engage with other older persons. Self-directed ageism can be seen in neglecting one's medical check-up, thinking that pain and illness are unavoidable parts of aging. The few studies conducted have shown that just like younger agents of ageism, older individuals also hold ageist attitudes toward older persons (Cherry et al., 2016; Cohn-Schwartz & Ayalon, 2021), but no clear prevalence rates of ageism held by older persons toward peer exist. In addition, self-directed ageism in the form of holding negative views concerning one's own aging is also highly prevalent, documented in a variety of settings (Tully-Wilson et al., 2021). Based on data from U.S. adults between the ages of 50 and 80, about 80% of the sample acknowledged at least one item reflecting self-directed ageism (e.g., health problems are inevitable) and this belief was more likely to be endorsed by the older age group (Allen et al., 2022).

It has been shown to have detrimental effects on one's health and well-being, including higher levels of depressive symptoms, reduced sensory and cognitive function, greater disability, more chronic health conditions, and even increased risk for mortality (Wurm et al., 2013). Self-directed ageism serves as a self-fulfilling prophecy and prevents older persons from fully engaging in preventive health behaviors and from fulfilling their full potential (Chang et al., 2020; Wurm et al., 2013). Despite these detrimental effects, older persons may not necessarily be aware of being ageist toward themselves, thus, take negative stereotypes of their own aging at

face value (Morrow-Howell, Li, Galucia, & Carpenter, 2026). In addition, ageism directed by older persons toward other older persons has been associated with social isolation and loneliness. For instance, research conducted in long-term care settings has found that many times older persons refrain from interacting with other older persons because they wish to disassociate from decline and disability associated with older age (Ayalon, 2018; Shippee, 2009).

Interventions to reduce ageism

The first ever global report on ageism led by the WHO identified four possible interventions to reduce ageism (World Health Organization, 2021b). The two interventions that have the strongest evidence base are intergenerational contact and educational interventions. These two interventions have shown to reduce prejudice and stereotypes toward older persons directed by younger persons (Burnes et al., 2019). The combination of the two interventions as was demonstrated in the Positive Education about Aging and Contact Experiences (PEACE) model was deemed particularly valuable (Levy, 2018; Lytle et al., 2021). However, their effects on reduced discrimination based on age (e.g., the behavioral component of ageism) have not been established (Burnes et al., 2019). Policy and laws to reduce ageism also have been identified by the WHO as effective not only in changing behaviors, but also in changing norms and perceptions concerning older age (World Health Organization, 2021b). However, a review of existing policies suggested that some aging policies could be contraindicated, resulting in higher levels of ageism toward older persons, rather than reduced ageism (Tesch-Römer & Ayalon, 2023). Although not directly aimed to reduce ageism, a public policy enacted in Singapore to fund medical care for older persons has found that since the enactment of the new public policy, opinions concerning older persons became more negative. This was attributed to the medicalization of aging as a result of the new policy (Ng et al., 2021). The last technique

identified by the WHO as having no evidence base is the reliance on public campaigns. Although this is considered a cost-effective mechanism to change public attitudes, evidence concerning its effectiveness has been scarce, broadly attributed to the limited research on this topic (World Health Organization, 2020), but may also be attributed to a tendency to present older persons in overly positive ways (Okun & Ayalon, 2022).

The need for a comprehensive approach to tackle ageism

One area which was neglected by the WHO report is ageism directed by older persons as the agents of ageism. The neglect was fueled by the limited evidence to support interventions to reduce ageism in the second half of life because even when such interventions were tested, the target population was usually mixed age, with limited attention to the specific characteristics of older persons as agents of ageism. Nonetheless, research conducted with older persons has shown that addressing ageism by older persons toward themselves is seen as a top priority of utmost importance to the fight against ageism (Okun & Ayalon, 2023). Respondents identified inner work as a possible mechanism to reduce ageism among older persons. Hence, they acknowledge the fact that they too can hold negative ageist attitudes toward other older persons as well as toward themselves (Okun & Ayalon, 2023).

A recent systematic review on the topic has identified 17 different studies which have attempted to reduce ageism directed by older persons toward other older persons or toward themselves. The meta-analysis found no evidence for the overall effectiveness of these interventions. Although some interventions reported a large effect size (e.g., educational, mindfulness), most interventions showed minimal or no effect. For the most part, the interventions distinguished between self- and other-directed ageism (with the effects on self-directed ageism potentially being more favorable). The moderated analysis by intervention type

(e.g., implicit, educational) or by ageism outcome (e.g., self-directed, other-directed) revealed consistent null results, suggesting that more research is needed to effectively reduce ageism in the second half of life. Analysis by the dimensions of ageism (e.g., cognitive, affective) was not conducted given the fact that most interventions did not assess these dimensions separately (Das, Gurín, Sun, Ševčíková & Ayalon, Under Revision).

The overall goal of this paper is to discuss possible interventions to reduce ageism directed by older persons toward other older persons or toward themselves. This effort is inspired by growing evidence concerning the negative effects of ageism in the second half of life accompanied by the limited available evidence to guide interventions to tackle this societal problem (Ayalon, 2025). In this paper, we employed a theoretical approach to identify possible interventions to reduce ageism. As ageism is a multi-dimensional construct, we examine interventions which primarily operate on one of the three dimensions of ageism: cognitive, emotional, and behavioral. However, as discussed below, we believe this division is not so straightforward and that the three dimensions of ageism are highly related. Each intervention is examined via a theory of change framework. A theory of change represents the theoretical framework linking actions to outcomes, thus explaining how and why an intervention is likely to produce change (Reinholz & Andrews, 2020). We believe that by linking possible interventions with relevant theories of change, we move the field forward toward theoretically informed interventions to tackle ageism. This has both practical implications because ageism is a real-life societal problem and theoretical implications to the understanding and conceptualization of ageism as a social problem.

Nonetheless, it is important to note that a) the proposed list of interventions by domain is not an exhaustive one. There are many additional interventions that could have been

described here, but we identified a limited number of interventions per domain to raise awareness and instigate further action; b) there is an overlap across interventions so that most interventions could fall under more than one domain, which are highly correlated. Nonetheless, we decided to classify interventions based on the most salient domain that they capture; and c) the mechanism of action of most interventions is speculative at best, given limited research on the topic. In fields characterized by limited intervention evidence, theory-driven hypothesis generation is essential. Moreover, oftentimes, there is more than a single pathway to account for the findings, yet we limit the explanatory pathways to ensure simplicity. Hence, interventions were selected based on their theoretical plausibility and relevance to later life contexts. See Table 1 for a summary of the various interventions discussed in this paper.

Cognitive interventions

These interventions primarily target the cognitive dimension of ageism (e.g., stereotypes) directed toward others and toward oneself, with secondary effects on the other dimensions. The stereotype embodiment theory explains ageism as a result of the internalization of negative age stereotypes throughout the life course. In older age, these stereotypes become self-relevant and result in negative age stereotypes directed toward oneself (Levy, 2009). As the main component responsible for ageism according to this theory is negative age stereotypes, we identified interventions that aim to directly impact change in negative age stereotypes.

Educational interventions aim to foster a more balanced view of aging and older age (Beach et al., 2025). The assumption is that ageism can be reduced by addressing a knowledge deficit. Such interventions address general stereotypes of older persons and aging (e.g., other-directed ageism) (Doncel-García et al., 2022; Steward et al., 2026). By doing so, the expectation is that in addition to stereotypes concerning other older persons, internalized views of oneself

will also be modified (Levy, 2009). Moreover, by learning about ageism and its negative effects, individuals become more conscious of their own ageist attitudes and this may result in reduced ageism (Suberry et al., 2025).

Cognitive restructuring interventions challenge cognitive errors about oneself (e.g., it is normal to feel pain when walking) and about other older persons (e.g., older persons have no sense of technology), which are deemed maladaptive to the individual holding them. This is done using Socratic reasoning and other challenging techniques to address cognitive errors about older age and aging and replace them with more adaptive, well-balanced ones (Beyer et al., 2019). These interventions follow the assumption that cognitive errors are the reason people hold ageist attitudes toward oneself and others. Hence, by challenging and replacing them, both self- and other-directed ageism can be reduced.

Implicit positive stereotypes interventions aim to change cognitive stereotypes, using implicit, subliminal messages of positive age stereotypes. Because ageism is viewed negatively, people aim not to think of themselves as ageist. Moreover, many times people hold ageist views in an unconscious way. Implicit interventions challenge these ageist views without triggering one's defense mechanisms. As the original study found that both an implicit and an explicit intervention reduced negative and strengthened positive age beliefs (Levy et al., 2014), the assumption is that addressing ageism indirectly with limited conscious awareness will result in a cognitive change. While considering this intervention, it is essential to acknowledge issues such as autonomy and informed consent, as stimuli are presented subconsciously.

The first two interventions (e.g., educational interventions, cognitive restructuring) address ageist stereotypes explicitly, whereas the third option (e.g., implicit interventions) addresses ageism implicitly. However, whereas educational interventions primarily address the

knowledge gap, cognitive restructuring and implicit interventions attempt to change one's schema about older persons. All three interventions operate in accordance with the stereotype embodiment theory (Levy, 2009). Except for cognitive restructuring, which may challenge self-directed ageism directly, the other two interventions address negative stereotypes mainly about other older persons, but in accordance with the theory these are thought to generalize to oneself.

When reviewing these interventions, it is important to consider a possible pitfall: aging entails many losses. We do not want to foster a worldview of older age as being equal to or even exceeding middle age or young adulthood. For instance, past research which examined social campaigns to reduce ageism has found a strong tendency to overemphasize positive, productive, successful aging, at the expense of excluding those older persons who cannot be defined as successful or financially productive in society (Okun & Ayalon, 2022). Such an approach would be contraindicated as it does not prepare individuals to real-life losses that may come with older age. Moreover, it may enhance ageism toward those who have failed the successful aging model and exhibit limitations that come with age. Instead, a balanced approach which acknowledges both losses and gains is required.

Emotional interventions

These interventions are geared to impact the emotional component of ageism (e.g., prejudices), with secondary effects on the remaining dimensions. These interventions can broadly be classified into two main categories. First, are those interventions (e.g., death café, death meditation) which aim to reduce one's sense of death anxiety directly. Terror management theory explains ageism as a result of one's fears of the end of life. These fears manifest in distancing oneself from all reminders of mortality and decline, including older persons (Martens

et al., 2005). Empirical support for these claims is derived from research among healthcare professionals which found that death anxiety is directly associated with ageism (Kolushev et al., 2021; Rababa, Masha'al, & Shahrour, 2023). Likewise, research conducted with over 1,000 Israelis over the age of 50 found a correlation between death anxiety and ageism (Bodner et al., 2015). A similar association also was noted in a smaller sample of older persons based in the United States (Depaola, Griffin, Young, & Neimeyer, 2003). Hence, it is hypothesized (though evidence is primarily correlational at the present) that if older persons can engage mortality more reflectively and openly and less defensively, anxiety about death and dying is likely to decline and with it also other-directed ageism and subsequently self-directed ageism. By doing so, the theory predicts that ageism, composed of all three dimensions (e.g., stereotypes, discrimination) will also be reduced. Death café and death meditation are supposed to confront us with our greatest fears about our own mortality and the mortality of our loved ones by bringing death and dying to the forefront:

Death café is a group discussion of individuals around the topics of death and dying (Miles & Corr, 2017). Fears, dreams, and experiences are shared with the purpose of increasing awareness of death and becoming more familiar with discourse around this societal taboo. Theoretically, it is expected that this realization will assist people to be more comfortable with the idea of death and the finality of existence, reducing anxiety and fear around these concepts.

Death meditation is a meditation exercise, guiding individuals to reflect about the finiteness of life and the possible termination of life at any time (Das et al., 2024). It aims to overcome fears of our finitude and develop a more appreciative view about life.

The next group of emotional interventions do not confront death anxiety directly. Instead, they aim to foster emotional regulation, which results in greater acceptance of reality, which also

consists of decline, disability, and inevitable death. Although acceptance is a cognitive process, we argue that mindfulness meditation, saying gratitude, and being in nature are interventions that operate primarily via emotional regulation (Boggio et al., 2020; Ríos-Rodríguez et al., 2024; Zhang et al., 2019), which in turn results in greater acceptance of one's own mortality and inevitable decline (Lester & Murrell, 2022). The end result of these interventions is reduced ageism toward oneself and possibly also toward others. Hence, whereas interventions which confront death anxiety directly likely primarily impact other-directed ageism, interventions which foster emotional regulation might be particularly effective in reducing self-directed ageism. However, in the absence of empirical data, these predictions remain speculative at the present time.

Mindfulness meditation interventions include breath awareness, body focused attention, and open monitoring of thoughts. These interventions aim to teach individuals to notice their own thoughts and emotions as well as their surrounding physical environment with greater awareness and acceptance without judgment. These interventions are expected to foster compassion and acceptance toward oneself and others (Lester & Murrell, 2022). In contrast with death meditation or death café interventions, mindfulness interventions foster acceptance with aging related changes, which are also parts of aging, rather than with death and dying.

Saying gratitude interventions consist of daily completion of a gratitude writing task (Boggio et al., 2020). This may include daily observations of mundane events, such as the rising sun or a good meal, but also reflections on one's accomplishments throughout life, like - processes. The goal is to make positive cues more salient, while possibly also encouraging more positive activities.

Being in nature interventions encourage daily encounters in nature without necessarily being physically active. The rationale is that being fully present in nature results in reduced stress. It also is associated with a sense of awe and ego dissolution, resulting in reduced sense of self-attention and increased sense of connection to others as well as the acceptance of temporality. As such, such interventions foster emotional regulation (Ríos-Rodríguez et al., 2024).

Behavioral Interventions

The third set of interventions have a strong behavioral component, with secondary effects on the remaining dimensions. The rationale is that ageism can be reduced via engagement in behavioral activities. Social identity theory suggests that individuals derive self-value by socially belonging to socially valued groups. If this cannot happen they may try to devalue other groups or boost their own social group (Tajfel & Turner, 2004). Both intergroup (e.g., bringing older and younger persons together) and intragroup (e.g., bringing older persons together) interventions view one's social identity as a salient factor. Following the predictions made by the contact theory (Allport, 1954), under certain conditions of equal status, common goals, cooperation and support of authorities, contact between individuals of different groups results in reduced anxiety or sense of threat from the group representing the "others" and increased sense of empathy.

Intergenerational interventions bring together individuals of different generations under favorable conditions (e.g., equal status, collaboration) (Christian et al., 2014). Under such favorable conditions, individuals are expected to develop empathy and reduced sense of threat toward the other age group. However, we argue that they may also view themselves as more similar to the other group, in this case, younger people who supposedly have higher social status

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3 due to their age. Hence, this may serve as a boost to one's sense of self-efficacy, simply by
4 having the opportunity to interact with a highly valued group (e.g., younger persons). This set of
5 interventions is likely to result primarily in reduced self-directed ageism.
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10 *Intragenerational interventions* bring together individuals of the same generation under
11 favorable conditions (e.g., equal status, collaboration). Under such conditions, individuals are
12 expected to develop empathy and reduced sense of threat toward the other group, which
13 represents other older persons toward whom they might feel a sense of threat otherwise. The
14 interaction with one's own peers might result in reduced sense of threat and increased sense of
15 empathy toward other older persons, who are now seen as equal rather than a devalued social
16 group. This is further supported by the fact that contact interventions are effective via the
17 inclusion of the outgroup in the self, thus resulting in reduced stereotypes of incompetence
18 (Cadieux et al., 2019). This in turn may result in reduced other-directed ageism (Ayalon, 2025;
19 Steward et al., 2026). It is important to differentiate such experiences from settings in which
20 older persons are brought together for the purpose of care with younger "others" providing care
21 and services, thus placing older persons in an inferior position, rather than as equals.
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38 Whereas intergenerational interventions reflect the more common approach of bringing
39 younger and older persons together (Christian et al., 2014) (though usually for the purpose of
40 reducing other-directed ageism toward older persons), intragenerational interventions
41 acknowledge the view of the older persons' age group as heterogenous, thus, bringing older
42 persons together, following the assumption that other older persons are perceived as representing
43 a different social group of one's own. It is hypothesized that the mechanism of action of each of
44 these two interventions is different. By being around younger persons under equal status in a
45 collaborative fashion, older persons may boost their sense of self-efficacy. This in turn may
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3 result in reduced self-directed ageism. On the other hand, by being around older persons under
4 equal status in a collaborative fashion, older persons may develop empathy or liking toward their
5 peers and this, in turn may result in reduced ageism toward other older persons (Ayalon, 2025).
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9 As intragenerational interventions are geared toward bringing (perceived) different groups
10 together, it is possible that their strongest impact will be on the behavioral component of ageism
11 and thus, they will result in bringing older persons together also in real life (Ayalon, 2025).
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16 Exercise interventions, pro-social, and pro-environmental interventions also are
17 behavioral in nature as they require the engagement in certain activities as a major component of
18 the intervention:
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24 *Exercise interventions* aim to foster physical activity among older persons. By taking part
25 in strength, balance or gait training, older persons gain embodied evidence of competence and
26 ability, which may challenge internalized stereotypes of decline in old age (Li et al., 2025).
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31 *Prosocial behavior interventions* encourage people to engage in practices that promote
32 social-supportive actions, such as volunteering or informal acts of kindness. The rationale is that
33 actively engaging in such behaviors, and being aware of these boosts one's sense of self-efficacy
34 and reduces one's sense of self-directed ageism (Tse & Cahill, 2023).
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40 *Pro-environmental behaviors interventions* have a similar mechanism to prosocial
41 behavior interventions, with the focus being the environment rather than human beings. These
42 interventions encourage people to engage in pro-environmental behaviors such as gardening or
43 recycling or to become explicitly aware of pro-environmental behaviors they have engaged in
44 throughout the day. The rationale is that actively engaging in such behaviors, and being aware of
45 it boosts one's self-efficacy (Lauren et al., 2016). This in turn, results in a reduced sense of self-
46 directed ageism.
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Just like intergenerational interventions, these interventions as well are expected to result in a boost to one's sense of self-efficacy, which in turn results in reduced self-directed ageism (Steward & Hasche, 2022). However, as noted, they do not operate on the behavioral component of ageism directly, but rather are implicit in their potential effects.

Who Benefits the Most and Why?

The theories of change described above attempt to explain why an intervention works, but a crucial question remains, that is for whom. Who is most likely to benefit from the various interventions described in this paper and why. The use of 60 to define older age is arbitrary for the purpose of discussion. Variations within the group of older persons exist and can be attributed both to one's chronological age; a person aged 60 is quite different from a person in his or her 90's either as an agent or as a victim of ageism, though both are defined as older persons in this paper. In addition, various social attributes make the experiences of an "older person" unique. Intersectionality is a key concept frequently stressed in the field of aging. Evidently, persisting inequalities continue to shape older persons' experiences. Not all older persons are equal and variations in one's exposure to and the holding of ageist views, emotions, or behaviors are highly dependent on these social attributes (Ayalon & Tesch-Römer, 2018; Gans et al., 2023; Gendron et al., 2024). Being a 70-year-old healthy White man is quite different from the experiences of a Black woman of the same age or from the experiences of a 70-year-old White woman with disability for that matter.

We know from research conducted with younger persons as agents of ageism that women and younger people are more likely to benefit from interventions to reduce ageism (Burnes et al., 2019). We also know that in the workforce, it is men, rather than women who oftentimes experience higher levels of ageism (Aharoni Lir & Ayalon, 2022; Martin et al., 2019). There is

also a strong overlap between ageism and ableism, which reflects the preferences toward able-bodied individuals (Gendron et al., 2024). Intersectionality, which reflects multiple marginalized identities (Wang et al., 2025) must be acknowledged when considering interventions to reduce ageism in the second half of life. Further research that acknowledges heterogeneity in older persons and takes it into account in the design and testing of interventions to reduce ageism in this age group is necessary. Given the limited research on this topic, we still lack clear guidelines to develop hypotheses.

One possible guiding principle could be one's sense of belonging to his or her social group of older persons (e.g., subjective age) (Ayalon, 2025). Although there is ample research demonstrating the benefits of maintaining a younger subjective age (Alonso Debrezeni, & Bailey, 2021), a younger subjective age may result in a lesser likelihood of identification with one's social group. Such an identification as representing a marginalized social group, in the present case, that of older persons, is deemed necessary to ensure that the group becomes active in protecting its own rights. This alludes to a possible paradox concerning the desired identification of older persons with their own social group (Okun & Ayalon, 2023). It is possible that those who actively attempt to distance themselves from other older persons by, for instance, maintaining a younger subjective age might benefit the most from intragroup interventions, where they receive an opportunity to engage with other older persons under favorable conditions of equal status and collaborative noncompetitive interactions. This might result in their view of other older persons as worthy and enjoyable for social interactions. On the other hand, those individuals who view themselves as belonging to the older "unfavorable" age group are likely to benefit the most from interventions which allow them to engage with younger persons, under favorable conditions. This might assist older persons in viewing themselves in a more favorable

light as worthy and enjoyable to be with (Ayalon, 2025). Hence, the desire to affect change in self- versus other-directed ageism might guide the choice of intervention.

An easy solution for intervention choice would be to rely on the notion of regression to the mean to identify those most likely to benefit from an intervention. Accordingly, extreme values tend to get closer to the mean over time. Hence, it is expected that those who are particularly low on one of the mediators will show the greatest improvement. For instance, it is expected that individuals with limited knowledge about age and aging will derive the most benefit from educational interventions geared to increase knowledge. As cognitive restructuring includes an educational component, but also active training in challenging one's own thinking, this intervention might be more effective than passive educational interventions. Likewise, those individuals who report high death anxiety might benefit the most from interventions that target death anxiety, such as death café or death meditation. However, as these interventions explicitly target one's greatest fears, it is possible that they will result in high levels of dropout among individuals who are unwilling to face their anxiety. Under such circumstances, it is likely that implicit interventions that supposedly result in similar outcomes via similar mediators such as mindfulness, being in nature or saying gratitude interventions might be preferable.

Consistently, research comparing implicit versus explicit interventions to change aging stereotypes found implicit intervention to be more effective. As ageism is an undesired quality, which is often experienced unconsciously, it might be easier to address ageist stereotypes, using implicit mechanisms (Levy et al., 2014). In the same vein, pro-social and pro-environmental interventions are implicit when it comes to targeting ageism, as individuals engaged in these interventions are not necessarily informed about their end goal. As such, these interventions

might be particularly effective to address ageism in those individuals who are less likely to acknowledge holding ageist attitudes.

The level of the mediator or the outcome might be relevant not only at the individual level, but also at the macro level. For instance, it is possible that in countries or settings where ageism toward older persons is a common or accepted “ism,” individuals will more easily engage in interventions that are implicit in nature and do not necessarily highlight ageism as a social problem that should be combated. This follows the rationale that it would be harder to directly confront well-accepted stereotypes directly. It also is important to acknowledge cultural variability in openness to death and in death anxiety (Eyetssemitan, 2025). Possibly, when a culture shows high openness to discussions of death, interventions that explicitly address death anxiety will be more popular and more easily engage older persons.

In countries where younger persons are more likely to report ageism, intergenerational interventions might be less relevant if the goal is to reduce self-directed ageism held by older persons. The demographic nature of the country may also be relevant (Officer et al., 2020). In those countries where there are fewer younger persons, older persons might derive greater benefits from social encounters with younger people and vice versa. Again, further research is needed to identify a clear direction to better match interventions to specific countries or cultural contexts.

Conclusions

Although each of the theories of change discussed above is possibly responsible for primarily modifying one domain of ageism, neither the domains nor the theories can be considered in isolation. It is likely that by bringing older people together under equal status and collaborative terms, death anxiety also declines. Similar effects may also be attributed to gaining

more knowledge about age and aging. By doing so, individuals may become less fearful of their own decline both because they become more aware of gains that come with aging, but also through processes of acceptance, which are also fostered via mindfulness meditation interventions for instance. According to Beck's cognitive model (Beck, 2008), there is a constant loop between cognitions, emotions, and behaviors. By affecting one of these dimensions, all other dimensions are likely to be affected. We argue that a similar process may exist also in the case of interventions to reduce ageism. However, further research is needed to better understand the interplay between the different theories and how they affect the different dimensions of ageism.

This theoretical paper raises more questions than answers. It complements research highlighting the current shortage in effective interventions to reduce ageism by demonstrating that such shortage is not only empirical but also theoretical. Although several theories to account for ageism exist, only a few attempts were made to distinguish between ageism directed toward older persons by younger agents of ageism and ageism directed by older persons toward themselves or others (Bodner, 2009; Lev et al., 2018). Moreover, most of these theories have not been established empirically in a consistent form.

To move the field forward, it is essential to further develop theories of change to identify which interventions work for whom and why. Such theories should not remain on paper but rather empirically tested and modified when needed to ensure relevance. There is a fine line between theory refinement following its empirical testing and conducting a fishing expedition to identify significant findings. This is why the present paper is important. It provides a preliminary blueprint for exploration.

Once a theory of change is established, it is essential to test it as an intervention first under controlled conditions to establish its efficacy and subsequently in real life to establish its effectiveness. As ageism is a real-life problem, it requires the continued commitment of policy and practice stakeholders who are vested in taking on knowledge supported by research and applied in real life. As such, interventions' feasibility and acceptability must be established. To ensure the sustainable scale-up of the findings, it is essential to collaborate with relevant stakeholders through all stages from theory of change to intervention development to implementation. Ultimately, the field should move from testing whether interventions to reduce ageism work to understanding why they work and for whom. This paper is a first step forward.

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Domain	Intervention	Theory of Change	Core Assumption	Proposed Mediator / Mechanism	Target Type of Ageism	Primary Outcome	Key References
	Cognitive Restructuring	Stereotype Embodiment Theory	Cognitive errors drive ageist attitudes; Socratic challenging replaces maladaptive schemas	↓ Cognitive errors → More balanced view of older age	Self- & other-directed	Reduced stereotypes	Beyer et al., (2019)
	Implicit Positive Stereotype Interventions	Stereotype Embodiment Theory	Ageism often held unconsciously; subliminal	Implicit exposure to positive age cues → ↑	Other & self-directed	Reduced implicit stereotypes	Levy et al. (2014)

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Table 1. Theory of Change Summary: Interventions to Reduce Self- and Other-Directed Ageism Among Older Persons

Domain	Intervention	Theory of Change	Core Assumption	Proposed Mediator / Mechanism	Target Type of Ageism	Primary Outcome	Key References
COGNITIVE	Educational Interventions	Stereotype Embodiment Theory	Ageism stems from a knowledge deficit; correcting misconceptions about aging changes internalized views	↑ Knowledge about aging & ageism → ↑ Conscious awareness of own ageist attitudes	Other- & (self)-directed	Reduced stereotypes & prejudice	(Doncel-García et al., 2022)

Domain	Intervention	Theory of Change	Core Assumption	Proposed Mediator / Mechanism	Target Type of Ageism	Primary Outcome	Key References
			positive cues bypass defensive mechanisms	Positive age schema (unconscious)			
EMOTIONAL	Death Café	Terror Management Theory	Ageism reflects fear of mortality; open group discussion of death reduces death anxiety	↓ Death anxiety → ↓ Distancing from reminders of mortality (older persons)	Self- & other-directed	Reduced prejudice (fear-based)	Martens et al. (2005); Miles & Corr (2017)
	Death Meditation	Terror Management Theory	Guided reflection on life's finitude	↓ Death anxiety → More	Self- & other-directed	Reduced prejudice (fear-based)	Das et al. (2024)

Domain	Intervention	Theory of Change	Core Assumption	Proposed Mediator / Mechanism	Target Type of Ageism	Primary Outcome	Key References
			fosters acceptance; reduces defensive avoidance of aging	appreciative, accepting view of aging			
	Mindfulness Meditation	Emotional Regulation → Acceptance	Non-judgmental attention training builds compassion and acceptance of decline/mortality	↑ Emotional regulation → ↑ Acceptance of own aging & mortality	Self- & other-directed	Reduced prejudice	Lester & Murrell (2022)

Domain	Intervention	Theory of Change	Core Assumption	Proposed Mediator / Mechanism	Target Type of Ageism	Primary Outcome	Key References
	Gratitude Interventions	Emotional Regulation → Acceptance	Salience of positive life cues fosters acceptance and positive affect, counteracting negativity bias	↑ Positive affect & emotional regulation → ↑ Acceptance of aging	Primarily self-directed	Reduced self-directed prejudice	Boggio et al. (2020)
	Nature Exposure	Emotional Regulation → Acceptance	Presence in nature induces awe, ego dissolution, and stress reduction,	↓ Stress / ↑ Awe → ↑ Emotional regulation → ↑	Primarily self-directed	Reduced self-directed prejudice	Ríos-Rodríguez et al. (2024)

Domain	Intervention	Theory of Change	Core Assumption	Proposed Mediator / Mechanism	Target Type of Ageism	Primary Outcome	Key References
			fostering acceptance of temporality	Acceptance of aging			
BEHAVIORAL	Intergenerational Contact	Social Identity Theory + Contact Theory	Favorable contact with valued younger groups boosts older persons' self-efficacy and reduces threat	↑ Self-efficacy (via equal-status contact with younger persons) → ↓ Self-directed ageism	Primarily self-directed	Reduced self-directed discrimination	Allport (1954); Christian et al. (2014)

Domain	Intervention	Theory of Change	Core Assumption	Proposed Mediator / Mechanism	Target Type of Ageism	Primary Outcome	Key References
	Intragenerational Contact	Social Identity Theory + Contact Theory	Favorable contact with heterogeneous older peers reduces perceived threat and increases empathy	↑ Empathy / ↓ Threat toward older peers → ↓ Other-directed ageism	Primarily other-directed	Reduced other-directed discrimination	Allport (1954); Ayalon (2025); Steward et al. (2026)
	Exercise / Physical Activity	Stereotype Embodiment Theory (behavioral)	Embodied evidence of competence challenges	↑ Physical competence → ↑ Self-efficacy → ↓	Primarily self-directed	Reduced self-directed discrimination & stereotypes	Li et al. (2025)

Domain	Intervention	Theory of Change	Core Assumption	Proposed Mediator / Mechanism	Target Type of Ageism	Primary Outcome	Key References
			internalized stereotypes of decline	Internalized negative stereotypes			
	Prosocial Behaviors (e.g., volunteering, kindness)	Social Identity Theory	Active contribution boosts sense of purpose and self-efficacy, counteracting self-directed ageism	↑ Self-efficacy (via prosocial engagement) → ↓ Self-directed ageism	Primarily self-directed	Reduced self-directed discrimination & stereotypes	Tse & Cahill (2023); Steward & Hasche (2022)

Domain	Intervention	Theory of Change	Core Assumption	Proposed Mediator / Mechanism	Target Type of Ageism	Primary Outcome	Key References
	Pro-environmental Behaviors (e.g., gardening, recycling)	Social Identity Theory	Active environmental contribution boosts self-efficacy similarly to prosocial behavior	↑ Self-efficacy (via eco-engagement) → ↓ Self-directed ageism	Primarily self-directed	Reduced self-directed discrimination & stereotypes	Lauren et al., (2016); Steward & Hasche (2022)

Note. All interventions are theoretically proposed; empirical evidence varies. Self-directed ageism = negative attitudes toward oneself as an older person. Other-directed ageism = negative attitudes toward other older persons. The references provided in the table reflect either relevant theory or actual interventions. However, not all interventions described were necessarily geared to reduce ageism nor targeted older persons.

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