

## Research Report

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# “I Will Be Healthy”: Ideal Self in Patients with Alzheimer’s Disease

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Received 29 June 2022

Accepted 15 November 2022

Pre-press 7 December 2022

Published 16 December 2022

### Abstract.

**Background:** Within the concept of the self, a distinction can be made between ideal self (i.e., what would like to become) and feared self (i.e., what would not like to become in the future).

**Objective:** We investigated ideal self and feared self in patients with mild Alzheimer’s disease (AD). We have also measured these self-related processes in relation to depression and anxiety.

**Methods:** We invited 31 patients with mild AD and 35 control participants to decide whether they would consider the statement (e.g., I will be healthy) as a representation that they would like to acquire (i.e., ideal self) or to avoid (i.e., feared self).

**Results:** Analysis demonstrated that more participants assigned the “I will be healthy” statement to ideal self than to feared self, and this tendency was observed in both AD participants and controls. Less depression and anxiety were observed in participants who have assigned the “I will be healthy” statement to their ideal self compared to those who assigned this statement to their feared self, and this was observed in both AD participant and control groups.

**Conclusion:** Our study demonstrates that AD patients tend to endorse positive health traits and to integrate these traits into their ideal self. AD patients tend to endorse health-related images that are associated with hopes when projecting into their future self. This positive projection into the self may create a motivational force (e.g., aspirations and hopes) to embody the “healthy” self that AD patients desire to be.

Keywords: Alzheimer’s disease, feared self, health, ideal self, self

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## INTRODUCTION

A distinction can be made between ideal self and feared self [1, 2]. While ideal self refers to what we would like to become in the future (e.g., I would be healthy), feared self refers to what we would not like to become (e.g., I would not be sick). Considering this distinction, we evaluate, in the paper, ideal and feared selves in patients with Alzheimer's disease (AD). To situate our study into the current literature, we illustrate, below, research dealing with the sense of self in patients with AD. We also provide theoretical background about ideal and feared selves in general.

Prior research has demonstrated a weakened sense of self in patients with AD. This weakened sense of self has been reported by research using the "Who am I" task on which patients with AD typically reply with "I'm a person diagnosed with AD." Research using this task has demonstrated low production of statements to the question "Who am I" in patients with AD, suggesting a diminished sense of self in AD [3–6]. In a similar vein, Ruby et al. [7] invited patients with mild AD to rate themselves on a list of 40 adjectives and found decreased self-judgment accuracy in AD patients. The weakened sense of self in AD can be also attributed to difficulties updating self-knowledge in patients with AD. This assumption is supported by the study of Klein et al. (2003) who invited a patient with AD to describe her personality now and before the onset of AD. They found that the current personality, as described by the patient, reflected self-knowledge before the onset of the disease. The study of Klein et al. (2003) mirrors theoretical frameworks suggesting that the sense of self can be, to some extent, intact, thanks to semantic/general knowledge [8], but outdated [9, 10]. The weakened sense of self in AD has been also reported by research demonstrating diminished ability in patients with AD in retrieving vivid and emotionally intense memories that help maintain self-consistency and self-coherence (i.e., difficulties in retrieving self-defining memories) [11–13]. There is evidence, however, suggesting that patients with AD, at least those in the mild stages of the disease, can succeed in retrieving some personal memories to reflect on situations in which they want to feel that they are the same person that they were before [14]. In other words, patients with mild AD can draw on some personal knowledge to maintain a continuous sense of self or even to reflect on situations in which they are concerned about their self-continuity [15–17].

While research on the self in AD has been mainly focused on the ability of patients to reflect on their past and present self, little is known about the ability of patients with AD to reflect on their future self. More specifically, little is known about what patients with AD would like to become in the future (i.e., ideal self) or even about what they would not like to become (i.e., feared self). Accordingly, in this study, we investigate ideal and feared selves in patients with AD, in order to understand how patients with AD construct points of references (e.g., aspirations, hopes, wishes) to embody the self they desire to be in the future.

The ideal and feared selves, as evaluated in our study, can be considered in light of theoretical accounts on possible selves [1, 2]. According to these accounts, possible selves refer to self-images associated with one's hopes, dreams, and dreads. More specifically, these models propose a distinction between ideal self that we would like to be and the feared self, that is, the undesirable but possible future self that we try to avoid. In light of this distinction, in this study, we investigate ideal and feared selves in patients with AD, with regard to a key issue for patients with AD, such as health. In other words, we investigated whether patients with AD consider health-related-images (e.g., "I will be healthy") as ideal or feared selves. We focused on this issue because health is an important issue for AD patients. AD is typically associated with behavioral and functional decline. These health issues are associated with images of burden on patients' caregivers and family, which may negatively impact self-images in patients (e.g., I will be a burden on my family and the society because of the functional decline). These health issues can be even associated with social isolation and, in some cases, with images of looming death, which may also negatively impact self-images in patients [18]. Because health a key preoccupation for patients with AD, we investigated whether patients with AD would attribute health-related-images (e.g., I will be healthy) to ideal self or to feared self.

To summarize, we investigated whether patients with AD would attribute representations related to health to ideal self or to feared self. By doing this, we aimed to elucidate whether patients would consider these representations (e.g., I will be healthy) as images that they would like to acquire. This issue is important because, at the clinical level, the ability of patients with AD to integrate health-related-images into ideal self (e.g., I would like to be in good shape) can create a motivational force (e.g., aspirations,

hopes, objectives) to embody this ideal self. Although one may expect that patients with AD would typically integrate health-related-images into ideal self rather than into feared self, the opposite can also be true if we consider the high prevalence of depression and anxiety in AD [19–22]. Negative thoughts, negative beliefs, pessimism (as typically associated with depression) as well as worry about consequences of the disease (as typically associated with anxiety) may result in a tendency of AD patients to fail in integrating health-related-images into ideal self. We thus expected less depression and anxiety in patients with AD who attribute health-related-images (i.e., the statement “I will be healthy”) to their ideal self compared with those who attribute these images to their feared self.

## METHODS

### *Participants*

The study included 31 patients with a clinical diagnosis of probable mild AD and 35 control participants. The AD diagnosis was made by neurologists or geriatricians according to the criteria developed by the National Institute on Aging and the Alzheimer’s Association criteria for probable Alzheimer’s disease [23] and Statistical Manual of Mental Disorders-IV criteria for dementia of Alzheimer type. The interval between the clinical diagnosis and study enrolment ranged from six to ten months. The control participants were independent and living at home and were mostly spouses or companions of AD patients. As shown in Table 1, control participants were matched with the AD patients according to gender, age, and educational level. For all participants, exclusion criteria were significant neurological or psychiatric illness and alcohol or drug abuse. None of the participants presented any major visual or auditory acuity difficulties that could prevent assessment. The study was conducted in accordance with principles stated in the Declaration of Helsinki. Participants freely consented to participate and were able to withdraw whenever they wished.

### *Cognitive and clinical characteristics*

To ensure that patients with AD were in the mild stage of the disease, and to ensure that control participants were free of cognitive decline, we assessed general cognitive ability and episodic

memory. We also assessed depression and anxiety to test our hypothesis. Scores are summarized in Table 1.

### *General cognitive functioning*

General cognitive functioning was evaluated with the Mini-Mental State Exam [24] and the maximum score was 30 points.

### *Episodic memory*

Episodic memory was evaluated with a French version [25] of the episodic task of Grober and Buschke [26] in which participants had to retain 16 words, each describing an item belonging to a different semantic category. Immediate cued recall was succeeded by a distraction phase during which participants had to count backwards from 374 in 20 s. This distraction phase was succeeded by two minutes of free recall and the score from this phase provided a measure of episodic recall (16 points maximum).

### *Depression and anxiety*

We used the Hospital Anxiety and Depression Scale [27] which consists of 14 items. Half of the items evaluates depression (e.g., I feel cheerful, I feel as if I am slowed down, I have lost interest in my appearance) and the other half anxiety (e.g., Worrying thoughts go through my mind, I can sit at ease and feel relaxed, I get a sort of frightened feeling like ‘butterflies’ in the stomach). Each item was scored on a four-point scale ranging from 0 (not present) to 3 (considerable). The maximum score for each subscale was 21 points. As recommended by Herrmann [28], the cut-off for each subscale was set at > 10/21 points. Five AD participants have scored above the cutoff on the depression subscale and four on the anxiety subscale.

### *Procedures*

The assessment of ideal and feared selves occurred in a structured interview design, and the interview was randomly intermixed within the cognitive and clinical assessment, as described above. Generally speaking, we invited participants to decide whether the following statement (i.e., “I will be healthy”) would describe their ideal self or their feared self. More specifically, we provided the participants with

Table 1  
Demographic, cognitive, and clinical characteristics of Alzheimer's disease and control participants

		AD <i>n</i> = 31	Controls <i>n</i> = 35	
Women/Men		17/14	19/16	$\chi^2(1, N=66)=0.002, p=0.96$
Age (y)		72.71 (6.36)	72.60 (7.59)	$t(64)=0.06, p=0.95$
Education (y)		8.71 (2.53)	9.83 (3.05)	$t(64)=1.61, p=0.11$
General cognitive functioning	MMSE	21.87 (1.45)	28.43 (1.22)	$t(64)=19.92, p<0.001$
Episodic memory	Grober and Buschke	5.58 (2.28)	10.03 (2.34)	$t(64)=7.79, p<0.001$
Depression	HADS	8.77 (3.15)	5.14 (2.80)	$t(64)=4.96, p<0.001$
Anxiety		8.26 (2.62)	4.74 (2.28)	$t(64)=5.83, p<0.001$

Standard deviations are given in brackets; performance on the Mini-Mental State Examination was correct responses (out of 30); performance on the Grober and Buschke task were correct responses (out of 16); the maximum score for the depression or anxiety subscale was 21 points with high scores indicating high depression and anxiety. AD, Alzheimer's disease; MMSE, Mini-Mental State Exam; HADS, Hospital Anxiety and Depression Scale.

the following instruction: "I would like to provide you with the following statement (i.e., "I will be healthy") and I invite you to tell me whether you consider this trait (i.e., being healthy) as belonging to your ideal self or to your feared self. To help you with the decision, I will define the concepts of ideal self and feared self. The ideal self is the kind of person you would like to be. The ideal self is thus a trait you would ideally like to have. The ideal self is not necessary that you actually have this trait here and now, only that you believe you want to have this trait. On the other hand, the feared self is the kind of person you fear being or worry about being in the future. The feared self is thus a trait that you would prefer not to become. The feared self is not necessary that you have this trait here and now, only that you want to avoid having it. I invite you now to decide whether the sentence "I will be healthy" would better describe your ideal self or your feared self". There was no time constraint to answer and the participants were asked if they have any question prior to answer.

### Analysis

To tests our hypothesis, we compared within each population the number of participants who assigned the "I will be healthy" statement to their ideal self vs. those who attributed this statement to their feared self. We then compared, within each population, depression and anxiety scores between participants who assigned the "I will be healthy" statement to their ideal self and those who attributed this statement to their feared self. We compared depression and anxiety scores using Welch-*t* test due to the unequal sample size.

Table 2

The number, and mean depression and anxiety scores, of Alzheimer's disease and control participants who assigned the "I will be healthy" statement to their ideal or feared self

		Ideal self	Feared self
Alzheimer's disease	<i>n</i> =	25	6
	Depression	7.60 (1.71)	13.67 (3.14)
	Anxiety	7.40 (1.98)	11.83 (1.83)
Controls	<i>n</i> =	31	4
	Depression	4.77 (2.75)	8.00 (.82)
	Anxiety	4.32 (2.06)	7.88 (.80)

Standard deviations are given between brackets.

## RESULTS

### "I will be healthy" as ideal self

As shown in Table 2, more AD patients assigned the "I will be healthy" statement to ideal self than to feared self,  $\chi^2(1, N=31)=11.64, p<0.001$ , Cohen's  $d=1.55$ . The same is true for control participants,  $\chi^2(1, N=35)=20.93, p<0.001$ , Cohen's  $d=2.44$ .

### Low depression and anxiety in "ideal self" participants

As shown in Table 2, lower depression was observed in AD patients who assigned the "I will be healthy" statement to their ideal self compared to patients who assigned this statement to their feared self,  $t(5.73)=20.90, p=0.004$ , Cohen's  $d=9.50$ . Lower anxiety was also observed in AD patients who assigned the "I will be healthy" statement to their ideal self compared to patients who assigned this statement to their feared self,  $t(8.05)=27.38, p=0.001$ , Cohen's  $d=12.45$ . In the control group, lower depression was observed in participants who assigned the "I will be healthy" statement to their

ideal self compared to those who assigned this statement to their feared self,  $t(15.03)=25.31$ ,  $p < 0.001$ , Cohen's  $d = 14.55$ . Lower anxiety was also observed in participants who assigned the "I will be healthy" statement to their ideal self compared to those who assigned this statement to their feared self,  $t(9.28)=44.63$ ,  $p < 0.001$ , Cohen's  $d = 23.71$ .

## DISCUSSION

We investigated whether patients with AD would attribute health-related-representations (i.e., "I will be healthy") to ideal or feared self. Analysis demonstrated that more participants assigned the "I will be healthy" statement to ideal than to feared self, this tendency was observed in both patients with AD and controls. Less depression and anxiety were observed in participants who have assigned the "I will be healthy" statement to their ideal self compared to those who assigned this statement to their feared self, and this was observed in both patients with AD and controls.

Our results show that AD patients tend to endorse positive health traits and to integrate these traits into their ideal self. AD patients thus tend to endorse health-related images that are associated with hopes when projecting into their future self. We believe that this is an important finding, at least at the clinical level, as this positive projection into the self may create a motivational force (e.g., aspirations and hopes) to both embody the "healthy" self that AD patients thus tend to consider positive health-related-representations as images that they would like to acquire rather than to avoid. The opposite can however be observed in patients who suffer high depression and anxiety. Negative thoughts, beliefs and pessimism, as typically associated with depression, as well as worry about consequences of the disease, as typically associated with anxiety, may result in the tendency of some AD patients to fail in integrating health-related-images into ideal self.

The pursuit of positive future self-images can be associated with psychological well-being and health [29, 30]. Regarding AD, the construction of the ideal self may optimize the ability of patients with AD to cope with life transitions (e.g., diagnosis of AD), probably by creating motivational and/or evaluative processes that define what is to be endorsed (i.e., ideal self) and what is to be avoided (i.e., feared self). Furthermore, endorsing a positive image of what is possible in the future for patients with AD may allow

them to mentally simulate hypothetical future scenarios that motivate decisions in favor of their ideal self or against their feared one. Clinicians may build on the desire of patients with AD to be in good health to motivate them to think about ways of achieving this objective. This stimulation, at least if implemented directly after the diagnosis with AD, may lead to decisions to engage in relevant activities (e.g., attending social activities) and fuel new healthy decisions (e.g., learning a new and adapted leisure activity, staying active as long as possible, and eating healthy). Building on our findings, clinicians can draw on the tendency of patients with AD to endorse ideal self-images in defining decisions and choices in favor of their ideal self, at least in patients with mild AD who do not suffer severe depression.

Regarding control participants, not surprisingly, more participants have assigned the "I will be healthy" statement to ideal self than to feared self. This finding fits with the Socio-emotional Selectivity Theory [31, 32]. According to this theory, older adults, without neurological or psychiatric conditions, benefit from high levels of emotional stability and successful emotional regulation, which results in a preference for positive information, a mechanism that has been referred to as an age-related "positivity effect". The latter effect was observed in our control participants who have tended to attribute positive images (i.e., health) to their ideal self. Supporting this tendency, research has demonstrated that older adults, without neurological or psychiatric conditions, tend to endorse hopes when projecting into their future-self, and this projection further help them to elaborate strategies to achieve this desired future-self [33, 34]. In a related vein, processing of the ideal self in older adults has been associated with positive psychosocial outcomes such as well-being, quality of life, and overall life satisfaction [30].

Because our study has used the statement "I will be healthy", one may argue that this statement does not strictly fit with the patients' reality as these patients may be more concerned with self-images such as "I am an AD patient" or "I am/I will be ill/dependent". While this is an interesting point, we decided to use a health-related images rather than a disease-related one for an ethical consideration. We were concerned that processing disease-related-image may elicit negative thoughts, feeling, and attitudes in the participants, resulting in distress. We thus preferred to use health-related rather than disease-related images. That being said, a potential shortcoming of our study may be the assessment of few facets of the sense of

the self (i.e., ideal vs feared self). Because the concept of sense of self is quite rich, it would be of interest to replicate our study with a larger assessment of self-images, and even assessing how patients with AD compare their actual self with the ideal/feared ones.

One shortcoming of our paper was the lack of a neuropsychological assessment allowing understanding of neuropsychological decline in patients and, ultimately, assessing relationship between this decline and the patients' sense of self.

To summarize, the study of the self in AD has been typically focused on the weakened sense of the self in patients with AD. While there is some weakened sense of the self in AD, as demonstrated in research on anosognosia, it is important to emphasize the positive side of the coin [35]. Specifically, our study emphasized how patients with AD tend to endorse ideal self when projecting in the future. When AD patients report that they want to be healthy, as observed in our study, this ideal-self-image should be emphasized as it may provide motivational forces for current and future thoughts, decisions, and behavior that may guide the patients in defining which strategy to construct, pursue, or avoid in order to achieve their ideal-self or evade feared-one.

## ACKNOWLEDGMENTS

We would like to thank all participants for their involvement.

## FUNDING

Dr. El Haj was supported by the LABEX (excellence laboratory, program investment for the future) DISTALZ (Development of Innovative Strategies for a Transdisciplinary Approach to Alzheimer Disease).

## CONFLICT OF INTEREST

The authors declare no conflict of interest.

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