

Divergent Patterns of Confrontation With Death Using the Anticipated Farewell to Existence Questionnaire (AFEQT): Cross-Sectional Comparative Study of Four Samples With Increasing Proximity to Death.

Juan Valdés-Stauber (✉ juan.valdes-stauber@zfp-zentrum.de)

University of Ulm

Ursula Stabenow

Diakonissenkrankenhaus Karlsruhe Rüppurr

Jakob Böttinger

University of Ulm

Sarah Kramer

University of Ulm

Reinhold Kilian

University of Ulm

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Abstract

Background: Based on the concept of "*Daseinsverabschiedung*", an anthropological theory of "Anticipated Farewell to Existence" (AFE) was suggested on the basis of six grounding dimensions ("derived in AFE"): selfhood ("expiration of the time of existence"), interpersonality ("altruistic preoccupation"), temporality ("struggle for acceptance"), corporeality ("wounded physical integrity"), worldliness ("reconciliation with own existence"), and transcendence ("self-transcendence"). The purpose of the study is to investigate the extent to which the relevance of these anthropological dimensions differs between people in different stages of life, especially those facing their own death.

Methods: The sample (N=485) consists of dying individuals in palliative wards and hospices (n=121); old people living in nursing homes not suffering from a mortal disease (n=62); young adults (n=152), and middle-aged adults (n=150). The relevance of anticipated farewell to existence was measured by means of the "Anticipated Farewell to Existence Questionnaire" (AFEQT). Further assessment tools: Big Five Inventory (BFI-10), Life Attitude Profile (LAP-R), Eastern Cooperative Oncology Group (ECOG), and Basic Documentation for Psycho-Oncology (PO-Bado). The internal consistency of the AFEQT was assessed using Cronbach's alpha and convergent validity by means of dimensions of LAP-R. Differences in the relevance of the AFEQT dimensions among stages of life were estimated by means of multiple regression models.

Results: According to Cronbach's alpha, the internal consistency of the AFEQT subscales was sufficient for the whole sample. Convergent validity with dimensions of LAP-R was found for young and middle-aged participants. Dying people scored significantly higher for most of the dimensions than young and middle-aged as well as elderly people. Personality traits of "openness" and "agreeableness" are positively associated with the extent of assessed dimensions of AFEQT.

Conclusions: Anthropological reflections on the structure of human beings, which is activated or actualized in a special way in the face of death, can provide a framework for practice facing a humanization of medicine at the end of life, considering real experiences, possible needs, and underlying human conditions when facing end of life. The dimensions proposed can be taken into account in a sensitive way by supporting dialogues with dying people and their relatives.

Trial registration: observational study.

Background

The philosopher Ferrater Mora put forward the ontological thesis that to be real is equivalent to being susceptible to being ceasable, and thus "cessation" or "ceasing to be" would be the *ontological measure* of existing entities as real. There would be three ways of "ceasing to be": for matter (inorganic world) means "cessation" a "decay of structures", for living beings "perishing", and for humans "dying" [1]. From an anthropological perspective, "dying" is a "suffering of death" [2], which leads in the first-person perspective to an awareness of the certainty of a personal finiteness, and in the third-person perspective to a witnessing of the dying of others, in particular of one's nearest, as well as to a culturally anchored treatment of the deceased and ritual expressions dealing with death; and finally, in the second-person perspective, "the dying for someone" for an *other* [3], the symbolic co-dying with one's nearest [4], and the granting of a "transient eternity" [5]. In considering these perspectives, five denotations of the term "death" were drawn up and grounded: "death" as mortality, as the principle of annihilation, as the process of dying, as the boundary of being or its transition, and as the state of "being dead", metaphysically meant as "non-being" or "nothing" [6].

The dialectic of death-in-life (mortality) and life-in-death (dealing with mortal remains, appreciation of the deceased in affection, in memories, and in rituals) was aptly formulated by Paul Ludwig Landsberg as "presence of the absent" and "absence of the present" [4]. Taking death "seriously" (as philosophically proposed since Kierkegaard's "decisiveness of death" and "earnestness") [7] can lead to an enrichment of life, for example through relativization, prioritization, and practice in reflective attitudes.

Based on the concept of *Daseinsverabschiedung*, a theory of "Anticipated Farewell to Existence" was introduced as a personal task of a panoptic examination of one's own death, of the lived and un-lived, as well as of the remaining life on the basis of fundamental dimensions of human existence. The deeper sense of "farewell" was drawn up by Kübler-Ross as a personal leave-taking from life [8]. These grounding dimensions, based on a fundamental ability to symbolize, are the following: selfhood, interpersonality, temporality, corporeality, worldliness, and transcendence [9]. In analogy, dimensions of the confrontation with the anticipated farewell to existence were also suggested; two factors that were largely regarded as complementary were assigned to each dimension: the dimension of self-transcendence (factors: permanence and metaphysical rise); the expiration of the time of existence (conclusion and farewell); altruistic preoccupation (bequest and charity); reconciliation with one's own existence (fulfilment of existence and harmony); struggle for acceptance (resistance and acceptance); wounded physical integrity (physical disability and corporeality as presence) [9].

These dimensions are generated from a theoretical approach and regarded as fundamental for human beings; thus, dimensions drawn up *priori* cannot be further reduced. The hypothesis underlying this investigation is the empirical translatability of this model into psychology, when one's own death appears to be necessary and unavoidable. This translation resulted in a questionnaire that was used in the empirical investigation of the real confrontation with the death of dying people.

Assumptions of *Daseinsverabschiedung* theory

The philosophical-anthropological construct tested is based on fundamental dimensions of being human. Human phenomena are grounded in the interconnection between these fundamental dimensions and account for personal existence. From an existential perspective, an inductive position is taken in so far as individual life configures itself into an existence by constructing categories of meaning on the basis of freedom, radical exposure to life, and

responsibility for personal meaning; this expresses general human categories of meaning, but these arise from the particular existence with its empirical condition of being-in-the-world and of being-with-(relevant)-others.

The present study assumes that the seven underlying fundamental dimensions of human beings can be translated into specific fundamental dimensions that are activated in the confrontation with death. The fundamental dimensions of humans are the ability to symbolize as fundamental for all other dimensions, i.e. for ipseity-selfhood, interpersonal, temporality, corporeality, worldliness, and transcendence. Each of these becomes transformed for the human phenomenon of the confrontation with death in “struggle for acceptance” (for “ipseity/identity”), “reconciliation with one’s own existence” (for “worldliness”), “wounded physical integrity” (for “corporeality”), “expiration of the time of existence” (for “temporality”), “altruistic preoccupation” (for “interpersonal”), and “self-transcendence” (for “ability to transcend”). These dimensions have already been defined and justified in depth [9].

The construct “Anticipatory Farewell to Existence” is basically philosophical-anthropological since it is intrinsically congruent with the analytical structure of a human being, who has not only a solid being but also modalities of being, which are synthetically constituted in the context of the real human condition. Therefore, the question arises as to whether the abstract construct could be translated into an empirical model that could find practical application and ethical justification in caring interventions, for example in caring for the dying.

The following assumptions are formulated for this postulated translatability from the analytical (a priori) into the synthetic (empirical) structure of human beings:

1. The assumption that the stated dimensions are actually relevant in the personal confrontation with death because they result from an activation of fundamental issues by awareness of death as unavoidable when facing a mortal disease.
2. The assumption that the dimensions are not reducible among them but represent different fundamental aspects of humans dealing with their own death.
3. The assumption that there are individuals who tend to confront death strongly along the dimensions outlined and individuals who tend to confront it less so.
4. The higher the scores for factors and dimensions, the stronger the confrontation with fundamental issues facing one’s own death, but also the firmer the recognition of one’s own finiteness.

Dimensions of “Anticipated Farewell to existence”

The generativity of the dimensions is systematically applied, as shown in Fig. 1. The six dimensions proposed and their respective two-factor structures are presented in Supplementary Table 1 and are defined as follows [9]:

The dimension of the “expiration of the time of existence” is aimed at the realization that by its nature one’s own existence comes to an unavoidable cessation. This awareness of own cessation-to-be may initiate a process of self-distancing (“farewell”) and also acceptance (“conclusion”).

The dimension of “reconciliation with one’s own existence” aims for an emotional balance that attempts to bring the lived and the unlived to congruence in a personal sense of coherence. This balance is not arithmetical. Rather, it reflects the degree of life realization (“fulfilment of existence”) and the perceived extent of coherence (“harmony”).

The dimension of “struggle for acceptance” is not meant teleologically but as an open process that expresses the real dissension and existential contradictions that arise as existence in the face of the inevitable own death. This state of foreseeable, inescapable cessation of being sets in motion an ambivalence in the deep layers of our existence that moves to varying degrees between an attitude of “acceptance” and “resistance”. These are the only factors within a dimension that are not complementary but opposite. “Resistance” means that despite the awareness of one’s own finiteness, an emotional reaction of defensiveness and reluctance arises when facing death. “Acceptance” means the degree of assumption of the unavoidable finiteness and the lived as well as the unlived life from an evaluative biographical retrospect.

From a medical-anthropological point of view, the dimension of “wounded physical integrity” means the inclusion of embodiment in this theoretical construct, because it is in a state of irreversible decay and leads to dependence. This body-related condition is regarded as essential for the examination of the dying process beyond pain and functional disorders. Two aspects are considered in this dimension: the biological body (“physical disability”) and the experienced body as interacting closely with and helping people (“corporeality as presence”).

The dimension of “altruistic preoccupation” means that the process of *Daseinsverabschiedung* (farewell to existence) implies the inclusion of the compassionate. Every self is existentially interwoven with others with whom there is a deeper emotional bond. Thus, farewell to existence must consider relevant others in a double sense: others as bearers of traces of one’s own existence (“bequest”) and others as addressees of the efforts to relieve them emotionally through an ego-decentred attitude (“charity”).

The dimension “self-transcendence” means the reflective detachment from painful circumstances at the end of life in the certainty of one’s own death. If transcendence as self-distancing occurs, it will be gradual. The factor “permanence” means the striving for, or the disregard of, a spiritual or material memory

by others who were possibly earlier addressees of one's own working, loving, and living. The factor "metaphysical rise" means the conviction or rejection that one's own existence in the world could possibly change into another way of being (not only in the religious sense) and thus the essence of being experiences a continuation.

Methods

Aim

The main objective of the study is to compare quantitatively the dimensions and factors of the *Daseinsverabschiedung* theory by means of the AFEQT questionnaire between dying people in palliative care and people in other stages of life. The second objective is to examine the dimensional structure and the psychometric properties (objectivity, reliability, convergent validity, and criterion validity) of the AFEQT questionnaire as a formative model. The criterion validity consists of the increasing importance of outlined anthropological dimensions that are especially activated when facing own death, with proximity to death throughout life stages.

Study design

The study design is naturalistic, cross-sectional, comparative, and multicentric, performed using the novel assessment instrument AFEQT to measure the differences in the degree of confrontation with own death. This questionnaire was developed after a Delphi forum and according to the rules to phrase questions [10]. The German questionnaire was translated into English; a native speaker did a reverse translation with 95% matching and correction of the few discrepancies (see Supplementary Table 1). The sample consists of a total of N = 485 participants, divided into the following partial samples: dying individuals cared for in palliative wards and in hospices (n = 121); old people living in nursing homes not suffering from a mortal disease (n = 62); young adults (18–25 years old, n = 152); and middle-aged adults (40–55 years old, n = 150). The subjects were consecutively included in the study if they had given their consent. All hospice residents and palliative patients were from the same city and were assessed by the same physician (a specialist in psychosomatics and experienced psycho-oncologist); the home residents came from four different nursing homes and were assessed half by a psychologist and half by a physician; young adults (mostly students) and middle-aged adults came from the same state in Germany and were interviewed by two doctorate candidates. Inclusion criteria for the hospice and palliative patients were: suffering from a disease in the terminal stage; sufficient cognitive and/or verbal abilities to be able to deal with the questions – the answers were entered by the interviewer in the case of severe weakness; informed consent to participate in the investigation. In nursing homes an additional inclusion criterion was considered: not suffering from a known mortal illness. Inclusion criteria for young adults and middle-aged adults were informed consent, age, and not suffering from a severe illness. The exclusion criteria resulted from the above-mentioned inclusion criteria. In the case of psychological stress caused by the examination, the participants were subsequently provided with supportive psychotherapeutic care; this occurred with only three participants.

The study, including all implemented instruments, was approved by the ethics committee of the University of Ulm (Germany) for the examination of dying people (registration no. 45/15), for the extension of the study to nursing homes (registration no. 235/18), and for the extension of the study to young and middle-aged adults (registration no. 02/19). All participants provided a written informed consent.

Description of sample

The four subsamples were compared using 17 socio-demographic, medical, and personality variables. Women were overrepresented, especially in the subsample of elderly people (on average 85.0 years old, 84% women). High-school graduates are overrepresented in the subsample of young adults (on average 20.5 years old, 72% high school). As regards parenthood, the subsample of middle-aged adults (on average 48.7 years old, 91% parents) and the subsample of dying people (on average 70.0 years old, 83% parents) are overrepresented. Only 21% of elderly people lived in couples, but 91% of middle-aged and 49% of dying individuals. An immigration background was reported by 14% of the participants. No differences were found for psychiatric hospitalizations or any psychiatric treatment. A quarter of elderly people (23%) and four out of five dying individuals received psychopharmaceuticals. Dying people reported much more psychological and physical stress as well as impaired performance status than old people living in nursing homes. There are few personality traits differences with the exception that dying people showed on average more agreeableness and older people more conscientiousness (see Table 1). These variables were considered as control variables in multivariate regression models.

Table 1

Multidimensional profile of compared groups. Differences are based on Mann-Whitney tests or variance analyses – Scheffé test (metric variables) and chi-square test (categorical variables).

	Whole sample (N = 485)	Young adults (1) (N = 152)	Middle-aged (2) (N = 150)	Elderly people (3) (N = 62)	Dying persons (4) (N = 121)	Differences
	M (SD) or %	M (SD) or %	M (SD) or %	M (SD) or %	M (SD) or %	P / effect size
Socio-demographic variables						
1. Age	49.8 (23.9)	20.5 (2.4) R: 18–25	48.7 (4.4) R: 40–55	85 (7.1) R: 67–97	70 (11.0) R: 40–91	
2. Gender (% women)	66%	63%	67%	84%	61%	0.012 / 0.15
3. Education (% ≥ secondary)	43%	72%	51%	33%	51%	< 0.001 / 0.50
4. Immigration background	14%	17%	7%	12%	20%	0.023 / 0.14
5. Parenthood	57%	1.3%	91%	66%	83%	< 0.001 / 0.78
6. Currently living in couple	56%	41%	91%	21%	49%	< 0.001 / 0.50
Medical history variables						
7. Psychiatric hospitalization (lifetime)	7.4%	8.5%	5.4%	6.5%	8.9%	n.s.
8. Outpatient psych. treatment (life)	20%	20%	21%	13%	24%	n.s.
9. Current psychopharmaceuticals	25%	6%	2%	23%	80%	< 0.001 / 0.76
Additional clinical variables						
10. Σ psychological stress (PO-Bado)				4.36 (4.54)	9.62 (7.41)	< 0.001 / 0.80
11. Σ physical stress (PO-Bado)				3.74 (3.08)	7.38 (4.06)	< 0.001 / 0.97
12. ECOG				0.97 (0.90)	3.13 (0.72)	< 0.001 / 2.75
Personality dimensions						
13. BFI – Neuroticism	2.86 (0.90)	2.71 (0.68)	3.02 (0.57)	2.93 (1.07)	2.82 (1.28)	2 > 1
14. BFI – Extraversion	3.12 (0.93)	3.14 (0.68)	3.26 (0.77)	3.00 (0.98)	2.99 (1.27)	∅
15. BFI – Openness	3.28 (0.93)	3.18 (0.75)	3.14 (0.73)	3.42 (0.96)	3.52 (1.23)	4 > 1, 2
16. BFI – Agreeableness	3.51 (0.79)	3.40 (0.70)	3.45 (0.64)	3.42 (0.84)	3.78 (0.96)	4 > all
17. BFI – Conscientiousness	3.38 (0.86)	3.07 (0.68)	3.06 (0.63)	4.25 (0.83)	3.72 (0.88)	4 > 1, 2; 3 > 1, 2, 4
Σ = sum of values of all items; M = mean; SD = standard deviation; Effect size: Cramer's V for for categorical variables, Cohen's d for metric variables; p = level of significance of test; BFI = Big Five Inventory-10; ECOG = Eastern Cooperative Oncology Group; PO-Bado = Psycho-Oncology Basic Documentation; R = Age range						

Assessment instruments

- a)** Anticipated Farewell to Existence Questionnaire (AFEQT): This questionnaire is based on an anthropological theory already developed for anticipatory dealing with one's own death [8, 9]. However, the dimension "wounded physical integrity" was not included in this investigation, as dying people who are physically decaying have, in principle, a clearer physical impairment than other groups that could be considered. The questionnaire consists of 51 questions related to five dimensions and 10 factors. The individual values are averaged over each dimension and factor.
- b)** The Basic Documentation for Psycho-Oncology (PO-Bado): From this validated basic documentation, the sections "Somatic Stress" (four items) and "Psychological Stress" (eight items) have been selected for the present study. Each item is answered on a Likert scale ranging between 0 ("not suffering") and 4 ("suffering a lot") [11]. The questions refer to the subjective experience of the patient and not to the intensity of the symptom [12]. In the study, the variable "sum score" is recorded as a simple addition of all values for each of the two scales.
- c)** Eastern Cooperative Oncology Group (ECOG): Similar to the Karnofsky Performance Scale, the ECOG – also named WHO or Zubrod Index – measures the current functional status on a scale from 0 ("normal activity") to 4 ("patient is totally confined to bed or chair") [13]. This index is also part of the PO-Bado described above [12].
- d)** Big Five Inventory (BFI-10): This is a validated scale for the dimensional recording of five personality dimensions (neuroticism, openness, conscientiousness, extraversion, and agreeableness) with 10 items, two per scale, which are averaged (one item must always be recoded). The answers are given on a Likert scale ranging between 1 and 5 [14].

e) Life Attitude Profile-Revised (LAP-R): Validated questionnaire consisting of 48 items distributed in six dimensions [15]: Life purpose (LP – Orientation and life tasks, feeling of individual significance); Coherence (CO – Awareness and acceptance of oneself, with others, and with life); Choice/Responsibleness (CR – Sense of responsibility, decision-making, freedom, and control); Death acceptance (DA – Death as part of life, absence of fear thereof); Existential vacuum (EV – Negative scale: Lack of purpose, goals, direction, interests, and decision-making); Goal seeking (GS – Search for challenges that could enrich life). As well as dimensions, there are two superordinate indices: Personal Meaning Index (PMI = PU + CO) and Existential Transcendence (ET = (PU + CO + CR + DA) – (EU + GS)) [16]. In this investigation, the German version by Mehnert et al. [17] was implemented.

Statistics

All metric variables considered were tested for normal distribution using the Shapiro-Wilk test. If the significance level (p-value) was < 0.05 , the assumption of a normal distribution was rejected. The 17 variables of the multidimensional profile were compared for four subsamples by means of variance analyses (differences were assessed with the Scheffé test, and for two subsamples (dying people and old people in nursing homes) by means of the non-parametric Mann-Whitney U test.

For each dimension and corresponding factors, the four subsamples were compared graphically by means of Whisker boxes and statistically by means of variance analyses. The relationship between the dimensions and subdimensions for the compared four subsamples was investigated with correlation matrices (product-moment correlations or Pearson correlations), stating the correlation coefficient $|r|$ and the significance level (p). We consider values of $|r|$ between 0.10 and 0.30 as a low correlation, between 0.3 and 0.5 as a medium correlation, and > 0.5 as a high correlation.

As for psychometric properties, objectivity, reliability, and validity were explored. Objectivity includes the homogeneity of the conditions of the investigation: all old and dying participants were accompanied in answering the questionnaires and were not left alone with their answers, whereby mainly supporting and clarifying statements were made; more sprightly participants were more independent and weakened patients were dependent on support. Old people living in nursing homes required support, but less than dying people because they were not as weak. Young and middle-aged adults did not need further support. In this respect, the objectivity of implementation was not completely homogeneous for naturalistic reasons. The objectivity of evaluation was more homogeneous, but in the case of dying people, answers sometimes required confirmation, clarification, or interpretation of the statement in the light of the underlying construct.

The reliability (in the sense of internal consistency) of AFEQT was tested using Cronbach's alpha. Two parameters were assessed for each item and for the overall test, allowing comparisons between the whole (test) and the elements (items): a) average inter-item correlation (AIC): this is the correlation of the questions with each other; if the correlation is too low, there is little homogeneity of the questionnaire or the dimension studied; if it is too high, the questions are redundant; it is assumed that values ≥ 0.30 indicate a good correlation among the items; b) alpha: this is a measure of the internal consistency of a test, i.e. how strongly the questions of a scale are related to each other; it is assumed that a value of ≥ 0.70 for the entire scale indicates good internal consistency (for a small number of items it is discussed in the literature whether 0.5–0.7 is acceptable); this overall value improves if the individual items with an alpha of the respective item greater than the alpha of the overall test are removed from the model [19]. Criterion validity was explored by means of two approaches: convergent validity was assessed with the Life Attitude Questionnaire-Revised (LAP-R), because of also dealing with existential issues, even confrontation with mortality; the reservation has to be made that only young and middle-aged adults (N = 302) completed this questionnaire due to the observed overstraining of nursing home, palliative care, and hospice participants, so we decide against assessing old people with a supplementary questionnaire. The second criterion for validity arises from the underlying anthropological model itself: the older the participants and the nearer death as the realization of the necessary mortality of humans, the stronger the scoring expressing higher levels of confrontation and also acceptance of the finitude of life.

The differences in scoring dimensions and factors in the course of life was examined in a first step by means of bivariate variance analyses, in a second step by means of multivariate linear regression analyses using robust estimators, and in a third step by means of multivariate regression models using propensity scores. Bivariate tests were performed by means of variance analyses and a post hoc Scheffé test. Multivariate regression analyses consider dimensions and factors of AFEQT as dependent and subsamples as independent group variables (dying people as base outcome) as well as 13 additional control variables; robust standard errors are used to obtain unbiased standard errors of coefficients under heteroscedasticity. Post hoc power ($1-\beta$) was calculated for these models. Propensity scores (for each subsample) compress all 13 control variables; F-statistics improves the application of propensity scores because of more degrees of freedom.

All statistical calculations were performed with the statistical package StataMP 13.0 and G*Power 3.1.

Results

Shapiro-Wilk tests demonstrate that for the whole sample (N = 485) all dimensions are non-normally distributed, with the exception of the "Resistance". In contrast to this, most of the dimensions are normally distributed for the subsample of young adults. The number of normally distributed dimensions decreases with age; for dying people, there is a very positive skew indicating that the tail is on the right side of the distribution, as illustrated by the differences between mean and median (see Table 2 and Supplementary Table 3). The higher the age, the higher the scores of all dimensions and factors of AFEQT, especially for dying people (see Fig. 2 and Table 5). The dispersion of dimensions' and factors' scores measured by variation coefficients is low to moderate (13–32%), especially for the dimension "altruistic preoccupation". Tendentiously, the lowest values for variation coefficients are found for dying people, but this group displays more outliers (see Fig. 2 and Table 5).

Table 2
Correlation matrix for dimensions and factors for compared four subsamples.

	Self-transcendence			Expiration time existence			Altruistic preoccupation			Reconciliation existence		
	Factor Ia	Factor Ib	Dim. I	Factor IIa	Factor IIb	Dim. II	Factor IIIa	Factor IIIb	Dim. III	Factor IVa	Factor IVb	Dim. IV
	r(1)/r(2)	r(1)/r(2)	r(1)/r(2)	r(1)/r(2)	r(1)/r(2)	r(1)/r(2)	r(1)/r(2)	r(1)/r(2)	r(1)/r(2)	r(1)/r(2)	r(1)/r(2)	r(1)/r(2)
	r(3)/r(4)	r(3)/r(4)	r(3)/r(4)	r(3)/r(4)	r(3)/r(4)	r(3)/r(4)	r(3)/r(4)	r(3)/r(4)	r(3)/r(4)	r(3)/r(4)	r(3)/r(4)	r(3)/r(4)
Ia Permanence												
Ib Metaphysical rise	.41 / .19											
	n.s. / .53											
I Self-transcendence	.86 / .73	.82 / .79										
	.74 / .83	.78 / .91										
IIa Conclusion	.39 / .17 .44 / .35	.41 / .46 .52 / .40	.48 / .41 .63 / .43									
IIb Farewell	.35 / .25 .34 / .34	.36 / .43 .35 / .30	.42 / .45 .45 / .36	.47 / .51 .55 / /n.s.								
II Expiration time existence	.43 / .24 .45 / .46	.45 / .51 .50 / .47	.52 / .50 .62 / .52	.87 / .88	.85 / .86							
	.89 / .79	.87 / .71										
IIIa Bequest	.70 / .69 .57 / .56	.34 / .31 n.s. / .26	.63 / .63 .46 / .44	.46 / .40 .36 / .35	.30 / .42 .42 / .21	.44 / .47 .44 / .38						
IIIb Charity	.37 .38 .26 / .27	.32 / .39 .29 / n.s.	.41 / .49 .36 / .19	.33 / .40 .48 / .20	.27 / .42 .48 / .34	.36 / .47 .55 / .35	.34 / .53 .39 / .30					
III Altruistic preoccupation	.65 / .60	.41 / .40	.64 / .63	.48 / .46	.35 / .48	.49 / .54	.81 / .86	.83 / .89				
	.50 / .48	.25 / .19	.49 / .36	.50 / .32	.54 / .35	.59 / .45	.85 / .72	.82 / .88				
IVa Fulfilment	.69 / .46 .34 / .27	.29 / .31 .34 / .31	.56 / .48 .44 / .33	.49 / .53 .54 / .25	.43 / .44 .50 / .18	.54 / .56 .59 / .30	.73 / .61 .44 / .31	.26 / .40 .51 / /n.s.	.59 / .57 .57 / .26			
IVb Harmony	.49 / .28 .32 / .49	.36 / .34 .28 / .38	.51 / .39 .39 / .48	.53 / .66 .39 / .28	.47 / .53 .57 / .25	.58 / .69 .54 / .35	.62 / .49 .53 / .35	.27 / .40 .54 / .24	.54 / .51 .64 / .35	.77 / .75 .72 / .52		
IV Reconciliation	.60 / .39	.35 / .35	.57 / .46	.54 / .64 .50 / .31	.48 / .52 .57 / .28	.60 / .67 .61 / .37	.71 / .58 .51 / .38	.28 / .43 .56 / .23	.60 / .57 .64 / .35	.94 / .93	.94 / .94 .92 / .89	
with own existence	.36 / .44	.32 / .40	.45 / .47							.92 / .85		
Va Resistance	n.s./ n.s. .37 / .23	n.s. / .25 n.s. / /n.s.	n.s./ .20 .26 / /n.s.	n.s./ n.s. .30 / /n.s.	n.s. /n.s. .40 / .27	n.s. /n.s. .40 / /n.s.	n.s. /n.s. .32 / .20	n.s. /n.s. .31 / /n.s.	n.s. /n.s. .38 / .21	-.17/ -.17 n.s. / /n.s.	-.19/-22 n.s. / .36 / n.s.	-.19/-.21 n.s. / .28 / n.s.

	Self-transcendence			Expiration time existence			Altruistic preoccupation			Reconciliation existence		
Vb Acceptance	.36 / .16	.30 / .47	.40 / .42	.38 / .56	.38 / .42	.44 / .56	.33 / .37	.26 / .42	.36 / .45	.40 / .34	.41 / .43	.43 / .41
	n.s./ .25	n.s./ .28	n.s./ .31	.29 / .27	.30 / .37	.33 / .42	n.s./ .20	.39 / .18	.34 / .23	.41 / .27	.57 / .27	.53 / .31
V Struggle for acceptance	.24 / n.s.	.23 / .47	.28 / .40	.24 / .38	.25 / .34	.28 / .41	.16 / .23	.26 / .30	.26 / .31	.19 / n.s.	.18 / .17	.20 / .16
	.31 / .31	n.s./ n.s.	.27 / .25	.37 / n.s.	.44 / .41	.46 / .31	.31 / .26	.46 / .21	.46 / .28	.37 / .22	.61 / n.s.	.54 / .22

R = Pearson correlation coefficient; (1) = subsample young adults (18–25); (2) = subsample middle-aged adults (40–55); (3) = elderly in nursing homes; (4) = c statistically significant

Product-moment correlations between all dimensions for the four subsamples presented in Table 2 indicate a high correlation (mostly > 0.80) between dimensions for all subsamples. The correlations between dimensions range mostly between 0.30 and 0.50, sometimes higher, especially for the dimensions and less for factors (see Table 2). An exception is the factor “Resistance”, which hardly displays significant correlation (and with dimensions and factors of “Reconciliation with own existence” even negative correlations); especially remarkable is the lack of association between “Resistance” and “Acceptance” for all subsamples (see Table 2).

Reliability was investigated considering internal consistency (Cronbach’s alpha). For the whole sample and for the subsamples of young adults, middle-aged adults, and elderly people, almost all dimensions showed an alpha > 0.70, whereas the different factors showed a greater heterogeneity. Only for dying people was alpha insufficient, with the exception of the dimension “Reconciliation with own existence” (see Table 3).

Table 3

Reliability of the “Anticipatory Farewell to Existence Questionnaire” along dimensions and each corresponding factor by means of Cronbach’s alpha applied to the four compared subsamples.

	Whole sample (N = 485)		Young adults (N = 152)		Middle-aged adults (N = 150)		Elderly people (N = 62)		Dying persons (N = 121)	
	Cronbach’s α		Cronbach’s α		Cronbach’s α		Cronbach’s α		Cronbach’s α	
	AIC	α	AIC	α	AIC	α	AIC	α	AIC	α
a) Permanence	0.52	0.74	0.54	0.70	0.55	0.73	0.51	0.64	0.31	0.63
b) Metaphysical rise	0.38	0.56	0.21	0.47	0.78	0.69	0.57	0.62	0.37	0.44
Dimension I: Self-transcendence	0.36	0.74	0.31	0.71	0.24	0.68	0.19	0.63	0.27	0.65
a) Conclusion	0.50	0.66	0.19	0.48	0.43	0.70	0.30	0.56	0.53	0.60
b) Farewell	0.43	0.65	0.15	0.41	0.15	0.39	0.38	0.64	0.57	0.54
Dimension II: Expiration of own existence’s time	0.38	0.74	0.33	0.71	0.22	0.72	0.26	0.71	0.15	0.51
a) Bequest	0.25	0.68	0.29	0.72	0.23	0.64	0.31	0.62	0.34	0.61
b) Charity	0.24	0.52	0.16	0.39	0.21	0.51	0.30	0.53	0.39	0.53
Dimension III: Altruistic preoccupation	0.22	0.72	0.24	0.72	0.16	0.72	0.27	0.71	0.22	0.63
a) Fulfilment	0.29	0.64	0.35	0.70	0.24	0.70	0.48	0.68	0.27	0.52
b) Harmony	0.39	0.74	0.41	0.70	0.30	0.77	0.36	0.63	0.23	0.61
Dimension IV: Reconciliation with own existence	0.35	0.83	0.43	0.85	0.27	0.85	0.40	0.80	0.27	0.73
a) Resistance	0.58	0.58	0.20	0.53	0.45	0.70	0.41	0.58	0.48	0.47
b) Acceptance	0.50	0.66	0.20	0.48	0.28	0.60	0.88	0.80	0.15	0.31
Dimension V: Struggle for acceptance of own death	0.30	0.70	0.18	0.63	0.24	0.71	0.43	0.75	0.07	0.42
Whole test	0.23	0.91	0.18	0.90	0.16	0.91	0.22	0.90	0.11	0.83

AIC = average inter-item correlation; α = scale reliability coefficient; the reliability is defined as the square of the correlation between the measured scale and the underlying factor. When α of an item > α of the scale, then the item was removed.

Convergent validity was assessed by means of the similar approach of the Life Attitude Questionnaire (LAP-R) that was used for the subsamples of young and middle-aged adults. The six dimensions of LAP-R and dimensions I–IV of AFEQT were considered. As expected, the dimension “Existential vacuum” (LAP-

R) was negatively associated with all dimensions of AFEQT (range of $r = -0.37$ to -0.60), except for “Resistance” ($r = 0.45$), which is similar to “Goal seeking” (LAP-R). Conversely, “Resistance” (AFEQT) was negatively associated with most dimensions and both superordinate indices, except “Existential vacuum” (0.45) and “Goal seeking” ($r = 0.27$). The dimensions of LAP-R “Life purpose” and “Coherence” and the indices PMI and ET showed moderate to high associations ($r = 0.26$ to 0.72) with AFEQT dimensions I–IV and Vb (acceptance), indicating a good convergence validity (see Table 4).

Table 4
Correlation matrix of the dimensions of LAP-R with dimensions of AFEQT (subsamples of young adults and middle-aged adults, $n = 302$).

	I	II	III	IV	Va	Vb
	r^P	r^P	r^P	r^P	r^P	r^P
Life purpose (PU)	0.42***	0.46***	0.51***	0.72***	-0.25***	0.26***
Coherence (CO)	0.56***	0.54***	0.48***	0.61***	-0.19**	0.36***
Choice/Responsibleness (CR)	n.s.	n.s.	0.22***	0.31	n.s.	0.15**
Death acceptance (DA)	0.14*	0.34***	0.25***	0.14*	n.s.	0.32***
Existential vacuum (EV)	-0.37***	-0.41***	-0.38***	-0.60***	0.45***	n.s.
Goal seeking (GS)	n.s.	-0.16**	n.s.	-0.19***	0.27***	0.14**
Personal Meaning Index (PMI)	0.54***	0.55***	0.54***	0.72***	-0.23***	0.34***
Existential transcendence (ET)	0.45***	0.56***	0.51***	0.71***	-0.31***	0.30***
Note: Alpha correction for 40 tests gives a significance value of $p^* < 0.0013$						
Post hoc power ($1-\beta$) when $n = 302$, $\rho_{H1} = 0.30$, $\alpha = 0.05$ amounts 0.99						
r = product-moment correlation coefficient; p = significance level of tests; n.s. = statistically not significant at 0.05–level; * < 0.05 ; ** < 0.01 ; *** < 0.001 ; I = Self-transcendence; II = Expiration of one’s existence time; III = Altruistic preoccupation; IV = Reconciliation with own existence; Va = Resistance; Vb = Acceptance						
Reconciliation with own existence; Va = Resistance; Vb = Acceptance						

The results of the multivariate regression analyses indicate that dying people scored significantly higher in all dimensions than young adults and middle-aged adults, and even than old people with the exception of self-transcendence (see Table 6). These results were confirmed by using propensity scores (see Table 7). The models also demonstrate an independent association of some regressors with dimensions of AFEQT: Parenthood is positively associated with “self-transcendence” and “Altruistic preoccupation” (similarly to women), “Reconciliation with own existence” with women and higher education; as regards personality traits, Neuroticism is tendentiously negatively, whereas Openness and Agreeableness are positively associated with assessed dimensions of AFEQT (see Table 6).

Table 5
Comparison of means among explored subsamples by variance analyses (Scheffé test).

	Young adults (1) (N = 152)			Middle-aged (2) (N = 150)			Elderly people (3) (N = 62)			Dying persons (4) (N = 121)			Differences (Variance analyses, Scheffé test)		
	M (SD)	Vc	Md	M (SD)	Vc	Md	M (SD)	Vc	Md	M (SD)	Vc	Md	Bartlett ^p	F ^p	Significant diff.
a) Permanence	2.62 (0.78)	30%	2.6	2.75 (0.76)	28%	2.8	3.16 (0.86)	27%	3.4	3.60 (0.63)	17%	4.0	9.33*	49.4***	3 > 1, 2; 4 > 1, 2, 3
b) Metaphysical rise	2.21 (0.69)	31%	2.2	2.74 (0.82)	30%	2.8	2.94 (0.87)	30%	2.9	3.09 (0.84)	27%	3.2	8.42*	29.7***	3 > 1; 4 > 1, 2
I: Self-transcendence	2.42 (0.62)	26%	2.4	2.74 (0.61)	22%	2.8	3.05 (0.65)	21%	3.2	3.25 (0.65)	20%	3.5	0.56 n.s.	53.2***	2 > 1; 3 > 1, 2; 4 > 1, 2, 3
a) Conclusion	2.97 (0.64)	22%	3.0	3.26 (0.58)	18%	3.4	3.20 (0.74)	23%	3.2	3.32 (0.78)	23%	3.6	14.1*	7.5***	2 > 1; 4 > 1
b) Farewell	1.89 (0.59)	31%	2.0	2.09 (0.52)	25%	2.0	2.67 (0.69)	26%	2.8	3.24 (0.69)	21%	3.4	12.5**	128***	2 > 1; 3 > 1, 2; 4 > 1, 2, 3
II: Expiration of own existence	2.43 (0.53)	22%	2.5	2.67 (0.48)	18%	2.7	2.93 (0.63)	22%	3.0	3.28 (0.55)	17%	3.3	7.1 n.s.	60.7***	2 > 1; 3 > 1, 2; 4 > 1, 2, 3
a) Bequest	3.12 (0.62)	20%	3.2	3.29 (0.49)	15%	3.4	3.14 (0.71)	23%	3.2	3.72 (0.48)	13%	4.0	20.9***	29.0***	4 > 1, 2, 3
b) Charity	2.64 (0.65)	25%	2.6	2.82 (0.56)	20%	2.8	3.12 (0.67)	21%	3.2	3.34 (0.69)	21%	3.6	6.7 n.s.	30.3***	3 > 1, 2; 4 > 1, 2
III: Altruistic preoccupation	2.88 (0.52)	18%	2.9	3.05 (0.46)	15%	3.1	3.13 (0.58)	18%	3.1	3.53 (0.47)	13%	3.6	5.6 n.s.	39.7***	2 > 1; 3 > 1; 4 > 1, 2, 3
a) Fulfilment	2.95 (0.71)	25%	3.0	3.15 (0.58)	18%	3.2	3.10 (0.75)	24%	3.2	3.41 (0.59)	13%	3.6	10.7*	11.8***	4 > 1, 2, 3
b) Harmony	2.79 (0.74)	26%	3.0	3.12 (0.62)	20%	3.2	3.21 (0.73)	23%	3.4	3.56 (0.67)	19%	3.8	4.9 n.s.	28.2***	2 > 1; 3 > 1; 4 > 1, 2, 3
IV: Reconciliation with existence	2.87 (0.68)	24%	3.0	3.13 (0.56)	18%	3.2	3.15 (0.68)	20%	3.3	3.48 (0.55)	15%	3.7	9.7*	22.6***	2 > 1; 3 > 2; 4 > 1, 2, 3
a) Resistance	2.36 (0.53)	22%	2.3	2.07 (0.53)	26%	2.2	2.45 (0.71)	29%	2.5	2.75 (0.68)	25%	2.8	16.1**	29.1***	1 > 2; 3 > 2; 4 > 1, 2, 3
b) Acceptance	2.64 (0.65)	25%	2.7	2.57 (0.64)	25%	2.6	3.00 (0.93)	31%	3.2	3.36 (0.50)	15%	4.0	34.9***	75.7***	3 > 1, 2; 4 > 1, 2, 3
V: Struggle for death acceptance	2.50 (0.43)	17%	2.5	2.34 (0.46)	20%	2.4	2.73 (0.64)	23%	2.8	3.21 (0.45)	14%	3.3	17.2**	82.6***	1 > 2; 3 > 2; 4 > 1, 2, 3

Post hoc power (1-β) when effect size $f^2 = 0.25$, $\alpha = 0.05$, and critical $F = 2.61$ is 0.99.

N = sample size; M = mean; SD = standard deviation; Vc = Variation coefficient (SD/M)x100; Md = median (50th percentile); p = level of significance : * < 0.05; ** < 0.01; *** < 0.001; F = F-statistics for the whole model; significant diff. = differences in Scheffé test among the four compared groups are statistically significant.

Table 6

Multivariate linear regression model dimensions and factors of "Anticipatory Farewell to Existence" questionnaire using robust stan

	Self-transcendence			Expiration time existence			Altruistic preoccupation			Reconciliation existence		
	Dim. I	Factor Ia	Factor Ib	Dim. II	Factor IIa	Factor IIb	Dim. III	Factor IIIa	Factor IIIb	Dim. IV	Factor IVa	Factor IVb
	Coef ^p	Coef ^p	Coef ^p	Coef ^p	Coef ^p	Coef ^p	Coef ^p	Coef ^p	Coef ^p	Coef ^p	Coef ^p	Coef ^p
Base outcome: Dying people												
1. Young adults	-0.73***	-0.64***	-0.83***	-0.77***	-0.39*	-1.14***	-0.56***	-0.51***	-0.61***	-0.68***	-0.61***	-0.74
2. Middle-aged	-0.75***	-1.02***	-0.46**	-0.62***	n.s.	-0.99***	-0.63**	-0.74***	-0.51***	-0.53***	-0.49***	-0.57
3. Elderly people	n.s.	n.s.	n.s.	-0.48**	n.s.	-0.71***	-0.48**	-0.58***	-0.37*	-0.62***	-0.62**	-0.61
Gender (1 = man)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	-0.10*	-0.16**	n.s.	-0.18**	n.s.	-0.23
Education	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.13*	n.s.	0.16*	0.16*	0.15*
Immigration history	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Parenthood	0.28*	0.45**	n.s.	n.s.	n.s.	n.s.	0.22*	0.37**	n.s.	n.s.	n.s.	n.s.
Partnership	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.16**	n.s.	n.s.	n.s.	n.s.
Psych. hospitalization	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Psych. treatment	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Psychopharmaceuticals	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	-0.24**	-0.08*	n.s.	n.s.	n.s.
BFI – Neuroticism	n.s.	n.s.	n.s.	n.s.	-0.08*	n.s.	n.s.	n.s.	n.s.	-0.11***	-0.09**	-0.12
BFI – Extraversion	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.06**	n.s.	n.s.	n.s.	n.s.
BFI – Openness	0.11**	0.12***	0.11*	0.70*	n.s.	0.12**	0.08**	0.06**	0.11**	0.08*	n.s.	0.10*
BFI – Agreeableness	0.18***	0.26***	0.10*	0.90**	n.s.	0.10*	0.19***	0.18***	0.20***	0.20***	0.21***	0.20*
BFI-Conscientiousness	n.s.	n.s.	n.s.	n.s.	n.s.	-0.10*	n.s.	n.s.	n.s.	-0.11*	n.s.	-0.12
N	428	428	428	428	428	428	428	428	428	428	428	428
F / p > F	16.8***	21.5***	8.3***	13.0***	3.1***	27.8***	15.6***	13.4***	8.5***	12.5***	7.4***	14.1*
R ²	0.33	0.37	0.19	0.33	0.10	0.50	0.36	0.33	0.25	0.28	0.21	0.29

Post hoc power (1-β) by effect size $f^2 = 0.15$, $\alpha = 0.05$, and critical $F = 1.67$ is 1.00.

Gender: 0 = women; 1 = men; Parenthood, partnership, immigration, psychiatric hospitalization lifetime, psychiatric treatment lifetime, current intake of psych
BFI = Big Five Inventory-10; **Coef.** = Robust regression coefficient; **p** = level of significance of test; **N** = size of sample; **F** = statistic of model; **R²** = explained variat
0.050; ** < 0.01.; *** < 0.001; **Ia** = Permanence; **Ib** = Metaphysical rise; **IIa** = Conclusion; **IIb** = Farewell; **IIIa** = Bequest; **IIIb** = Charity; **IVa** = Fulfilment; **IVb** = Harmor

Table 7

Multivariate regression analyses for dimensions and factors of "Anticipatory Farewell to Existence" questionnaire using propensity scores.

I: Self-transcendence			Permanence			Metaphysical rise			
Coeff	t	p	Coeff	t	p	Coeff	t	p	
<i>Base outcome: Dying people</i>									
ps1 (young adults)	-0.97	-9.84	< 0.001	-1.08	-10.4	< 0.001	-0.87	-7.27	< 0.001
ps2 (middle-aged)	-.062	-6.17	< 0.001	-0.86	-8.46	< 0.001	-0.36	-2.78	0.006
ps3 (elderly)	-0.64	-1.27	n.s.	-0.48	-1.62	n.s.	-0.20	-0.63	n.s.
N / F / prob > F / R ²	428 / 37.3 / < 0.001 / 0.22			428 / 44.4 / < 0.001 / 0.21			428 / 22.0 / < 0.001 / 0.13		
II: Expiration existence			Conclusion			Farewell			
<i>Base outcome: Dying people</i>									
ps1 (young adults)	-0.88	-10.53	< 0.001	-0.32	-2.92	< 0.001	-1.44	-14.73	< 0.001
ps2 (middle-aged)	-0.62	-7.49	< 0.001	0.02	0.17	n.s.	-1.27	-12.88	< 0.001
ps3 (elderly)	-0.70	-2.82	0.005	-0.34	-1.10	n.s.	-1.06	-3.54	< 0.001
N / F / prob > F / R ²	428 / 38.0 / < 0.001 / 0.24			428 / 6.6 / < 0.001 / 0.04			428 / 80.3 / < 0.001 / 0.40		
III: Altruistic preoccupation			Bequest			Charity			
<i>Base outcome: Dying people</i>									
ps1 (young adults)	-0.69	-9.05	< 0.001	-0.62	-7.30	< 0.001	-0.76	-7.89	< 0.001
ps2 (middle-aged)	-0.45	-6.02	< 0.001	-0.35	-4.46	< 0.001	-0.54	-5.76	< 0.001
ps3 (elderly)	-0.67	-2.93	0.004	-0.76	-2.79	< 0.006	-0.58	-1.95	0.052
N / F / prob > F / R ²	428 / 27.5 / < 0.001 / 0.18			428 / 17.8 / < 0.001 / 0.12			428 / 21.5 / < 0.001 / 0.15		
IV: Reconciliation existence			Fulfilment			Harmony			
<i>Base outcome: Dying people</i>									
ps1 (young adults)	-0.61	-6.81	< 0.001	-0.45	-4.87	< 0.001	-0.77	-7.38	< 0.001
ps2 (middle-aged)	-0.35	-4.07	< 0.001	-0.25	-2.80	0.005	-0.45	-4.40	< 0.001
ps3 (elderly)	-1.01	-3.01	0.003	-1.12	-3.19	0.002	-0.91	-2.26	0.014
N / F / prob > F / R ²	428 / 15.6 / < 0.001 / 0.10			428 / 9.0 / < 0.001 / 0.06			428 / 18.3 / < 0.001 / 0.12		
V: Struggle for acceptance			Resistance			Acceptance			
<i>Base outcome: Dying people</i>									
ps1 (young adults)	-0.72	-9.60	< 0.001	-0.38	-4.06	< 0.001	-1.05	-11.1	< 0.001
ps2 (middle-aged)	-0.88	-11.42	< 0.001	-0.71	-7.25	< 0.001	-1.08	-11.0	< 0.001
ps3 (elderly)	-0.44	-1.94	0.053	-0.14	-4.28	n.s.	-0.80	-2.85	0.005
N / F / prob > F / R ²	428 / 49.2 / < 0.001 / 0.29			428 / 20.6 / < 0.001 / 0.14			428 / 53.0 / < 0.001 / 0.27		
Coeff: regression coefficient applying robust standard errors; t = t-value on t-distribution; p = level of significance of association; ps1,2,3 = propensity score for compared subgroups by dying people as base outcome; ps includes: gender, education, migration background, parenthood, current partnership, any psychiatric hospitalization in lifetime, any psychiatric/psychotherapeutic treatment in lifetime, current intake of psychopharmacological, neuroticism, extraversion, openness, agreeableness, and conscientiousness.									

Discussion

The results of our study indicate that the dimensions of the concept of *Daseinsverabschiedung* ("Farewell to existence", as anthropologically grounded) are more relevant for people who are in the face of the imminent end of their lives than for those for whom the end of life is an abstract future event, even for old people not suffering from a mortal disease. The coexistence of acceptance and resistance in assuming the end of life highlights the internal rifts and inner struggle in the face of death, not as a contradiction but as an ambivalence that has to be taken into account in the care of the dying.

Using a qualitative approach, Raoul and Rougeron identified dimensions of sense-making in people dealing with the approaching end of their life that are similar to those of AFE: reinterpretation of life, search for meaning, densification of the connection to the world, to loved ones, and to one's self-control, vital energy, ambivalence toward the future, confrontation with death, and relationship with transcendence [18]. With the AFEQT questionnaire we provide the first standardized instrument on an anthropological and not primarily psychological basis for the systematic investigation of this sense-making process with

known psychometric properties [19]. Since the questionnaire is a formative and not a reflective one, exploratory and confirmatory factor analyses are not appropriate.

The dimensions and factors of the AFE have to be considered as a theoretical framework that could provide orientation in sensitive dialogues with dying people in medical, nursing, and hospice settings, whereby the questions of the questionnaire are hints for developing supporting dialogues rather than compulsory questions to grasp the state of mind when facing death. AFE may provide theoretical support to therapeutic interventions like “dignity therapy”, “spiritual care”, or “meaning in life” approaches, since meaning in life may positively influence not only personal attitudes but also medical symptoms in oncologic patients [20].

As pointed out above, the dimensions proposed may be taken into account in supportive dialogues with dying people and their relatives, similarly to Dignity therapy [21], Meaning-centred psychotherapy [22], and Managing Cancer and Living Meaningfully (CALM) [23, 24], but also in the supervision of professionals working in palliative settings and in the self-reflection about possible needs of patients along suggested anthropological dimensions, as in the Spiritual care approach [25]. Spiritual issues at the end of life include spiritual well-being, transcendence, hope, meaning, and dignity [26], but also forgiveness, self-exploration, search for balance, connection, self-actualization, and consonance [27]. There are several overlappings with meaning-in-life interventions that are associated with clinical benefits in measures of purpose-in-life, quality of life, spiritual well-being, self-efficacy, optimism, distress, hopelessness, anxiety, depression, and wish to hasten death [28]. Most of these issues can also be derived from the dimensions of AFE, indicating a convergence of all approaches that consider existential issues when facing end of life, because of their rooting in basic human needs.

The anthropological orientation of the *Daseinsverabschiedung* (AFE) theory outlined can be considered as its theoretical edge, implying a deeper comprehension of the human structure in the face of own death that can also be translated into spiritual, moral, and psychological needs. Since the outlined dimensions and subdimensions are not intuitively set but derived from an anthropologically justified network of human constants, a broad and comprehensible approach to inner debates facing death is enabled, abstaining from normative expectations regarding existential tasks at the end of life. A further advantage of the AFE theory is its panoptic principle: on the one hand the valuing reminiscence of lived life and on the other hand the anticipation of circumstances around the own cessation-to-be and very personal meaning of this definitive farewell for oneself and for relevant others, as meant in the concept of “anticipatory grief” [29, 30]. This panoptic principle considers and promotes the functions of reminiscence as portrayed in the subscales of the Reminiscence Functions Scale (RFS), especially to find biographical meaning and continuity, to maintain intimacy, to revive the bitterness of un-lived life, and to prepare for death as an accepting stance [31], independently of assumptions about sequential psychological phases of dying [32].

A gentle, unprejudiced, and respectful support of dying people can be seen as a humanistic mission when the concerns rooted in the deepest human structure and needs lead to a comprehensive attentiveness in the care at the end of life [33, 34].

In a complementary inductive approach, a qualitative investigation of the personal constructions of meaning in relation to death would be of interest. In this way, relevant topics about confrontation with death would be generated from the free or low-structured narrative answers; however, this generativity would have to be carried out separately for each homogeneous sample and, in a further step, the content analysis would have to be hermeneutically compared and illustrated with personal statements.

Conclusion

Anthropological reflections on the transcendental structure of human beings, which is activated or actualized in a special way in the face of death, may provide a framework for practice towards a humanization of medicine at the end of life, considering real experiences, possible needs, and underlying human conditions in the confrontation with own death. The transfer of the “Anticipated Farewell to Existence” theory in medical practice at the end of life means first and foremost a stance that takes into account the basic structure of human confrontation with own death in order to care sensitively and to assert individually, without moral prejudices or pressure regarding spiritual performances at the end of life and considering deep existential diremption.

Abbreviations

$(1-\beta)$ = post hoc power. The power of a test is the probability of rejecting the null hypothesis – albeit a significant result – when the real difference is equal to the minimum effect size.

I = Self-transcendence.

Ia = Permanence.

Ib = Metaphysical rise.

II = Expiration of one's existence time.

IIa = Conclusion.

IIb = Farewell.

III = Altruistic preoccupation.

IIIa = Bequest.

IIIb = Charity.

IV = Reconciliation with own existence.

IVa = Fulfilment.

IVb = Harmony.

V = Struggle for acceptance.

Va = Resistance.

Vb = Acceptance.

A = Scale reliability coefficient.

AFE = Anticipated Farewell to Existence.

AFEQT= Anticipated Farewell to Existence Questionnaire.

AIC = Average inter-item correlation BFI-10 = Big Five Inventory, 10 items.

CALM = Managing Cancer and Living Meaningfully (Short psychotherapy).

CO = Coherence.

Coef. = Robust regression coefficient.

CR = Choice/Responsibleness.

DA= Death acceptance.

ECOG = Eastern Cooperative Oncology Group.

ET = Existential transcendence.

EU = Existential vacuum.

F = Statistic of model.

GS = Goal seeking.

LAP-R = Life Attitude Profile-Revised.

M = Mean.

Md = Median (50th percentile).

N = Size of sample.

n.s. = Not significant.

PMI = Personal Meaning Index.

PO-Bado = Psycho-Oncology – Basic Documentation.

Ps = Propensity score.

PU = Purpose.

R = Pearson correlation coefficient.

R² = explained variance of dependent variable.

SD = Standard deviation.

RFS = Reminiscence Functions Scale.

Vc = Variation coefficient (SD/M)x100.

W = Value of Shapiro-Wilk statistics.

Declarations

Ethics approval and consent to participate: All methods were carried out in accordance with relevant guidelines and regulations. The study, including all implemented instruments, was approved by the ethics committee of the University of Ulm – Faculty of Medicine (Germany) for the examination of dying people (registration no. 45/15), for the extension of the study to nursing homes (registration no. 235/18), and for the extension of the study to young and middle-aged adults (registration no. 02/19). Written informed consent in German was obtained from all participants.

Consent for publication: Not applicable.

Availability of data and material: The authors provided all raw data on which the study is based. The Excel table with all raw data is provided in a supplementary file.

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Authors' contributions: *JVS*: Theoretical development, conceptualization of the study, methodology, formal analysis (statistics), original draft, review and editing. *US*: data collection, data curation for palliative and elderly sample. *SK*: data collection, data curation for sample of young adults. *JB*: data collection, data curation for sample of middle-aged adults. *RK*: Methodology, statistical expertise, senior counselling, review. All authors have read and approved the manuscript.

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Figure 1

This scheme is based on the already proposed and justified fundamental dimensions. From each fundamental dimension, another dimension is derived in the confrontation with own death, which together configures the "Anticipatory Farewell to Existence" construct. This construct is rooted in the analytical structure of human existence. A phenomenological-anthropological scope is added to each of these dimensions.

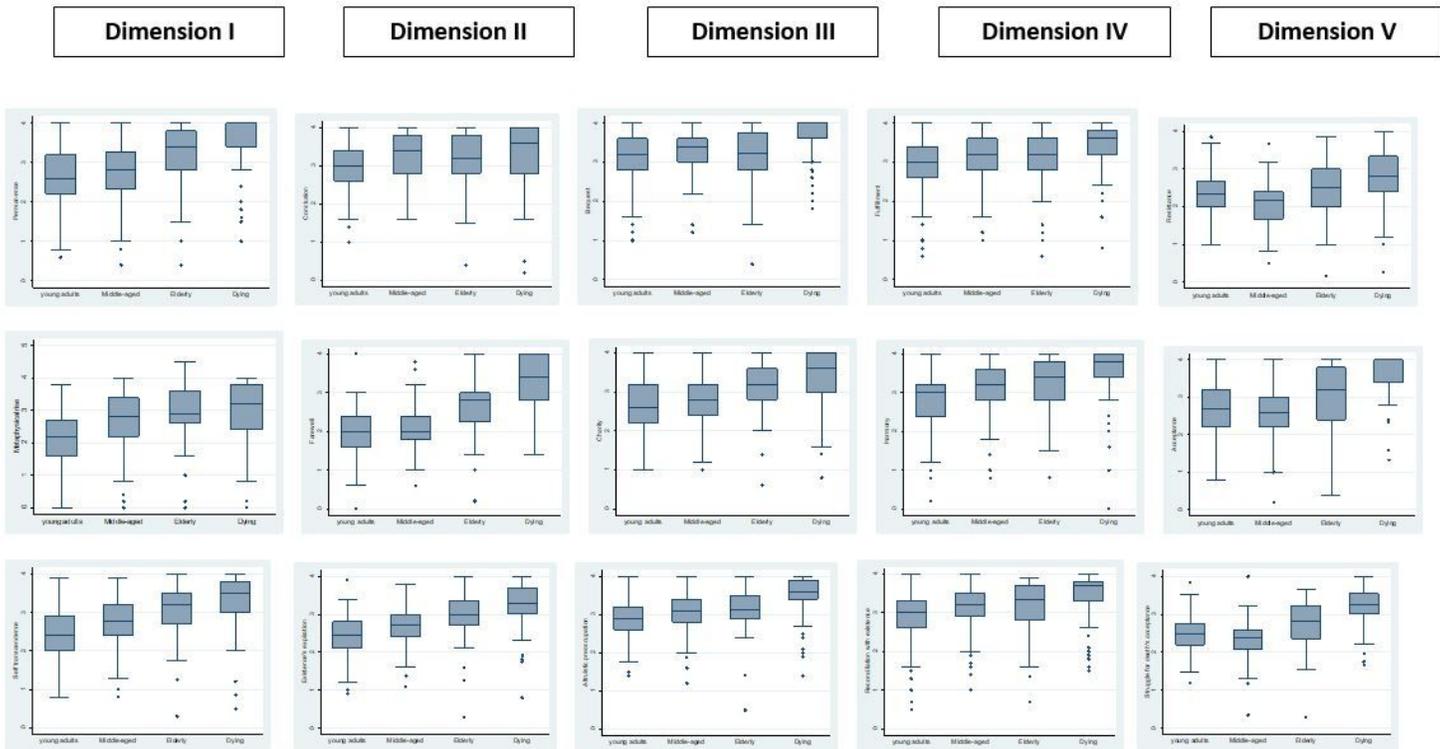


Figure 2

Whisker box comparing medians and scattering of all factors and dimensions of AFEQT among compared subsamples. Structure of the box: the box is delimited by the 1st quartile (25%) and 3rd quartile (75%); the median is the horizontal line in the box; the antennas (whiskers) correspond to the minimum and maximum data: points outside (*) are outliers if 1.5 times the interquartile distance (Q1–Q3) is exceeded upwards or downwards or extreme outliers if > 3 times the interquartile distance.

Supplementary Files

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