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Vincent van Bruggen^{1,2}, Joël Vos³, Gerben Westerhof¹, Ernst Bohlmeijer¹, and Gerrit Glas^{2,4}

Abstract

Existential anxiety (EA) is an expression of being occupied with ultimate concerns such as death, meaninglessness, and fundamental loneliness. Philosophers and psychologists have claimed its importance for the study of human thinking, emotion, decision making, and psychopathology. Until now research has mainly focused on death anxiety. Several death anxiety instruments have been developed and evaluated. This article is the first to review instruments measuring EA in a comprehensive way, that is, by covering several existential themes. Such instruments might be useful to gain insight in the interrelatedness of the aspects of EA, and application in clinical practice. Four models of EA were reviewed and compared resulting in a working definition. This definition was used to develop a search strategy that, after an initial screening, yielded 532 potentially relevant articles. A total of 78 instruments were identified, most of them measuring death anxiety. Five instruments were included that had a comprehensive perspective on EA. These were further evaluated using the consensus-based standards for the selection of health measurement instruments (COSMIN) criteria for publications about test development. The Existential Anxiety Questionnaire, turned out to be

¹University of Twente, Enschede, Netherlands

²Mental Health Institution Dimece, Deventer, Netherlands

³University of Roehampton, London, UK

⁴VU University, Amsterdam, Netherlands

Corresponding Author:

Vincent van Bruggen, Department of Psychology Health and Technology, University of Twente, Enschede, Postbus 217, 7500 AE Enschede, Netherlands.

Email: v.vanbruggen@utwente.nl

the most thoroughly examined, with promising results. The article concludes with recommendations about development and use of EA instruments.

Keywords

anxiety, existential, test development, psychometrics, COSMIN

Introduction

With its origins in the philosophical traditions of great thinkers such as Kierkegaard (1843/1954a, 1849/1954b), Jaspers (1913/1946), and Heidegger (1927/1979), the concept of existential anxiety (EA) has been embraced by many psychologists and psychiatrists (e.g., Deurzen & Adams, 2011; Glas, 2003, 2013; May, 1950/1977; Ratcliffe, 2005; Yalom, 1980). In addition, cognitive psychologists have also shown interest in EA: Terror management theory (TMT; Koole, Greenberg, & Pyszczynski, 2006) forms for instance an experimental tradition in which hundreds of experiments on EA have been conducted in the past decades, mainly focusing on death anxiety.

EA is generally defined as the expression of ultimate concerns about life itself, including things such as meaninglessness, death, fundamental loneliness, and lack of certainty. Available literature indicates that in normal circumstances, most people are quite able to manage these concerns. However, there are times (e.g., hardship, adversity, trauma, loss), when people are no longer able to cope and they are thrown into existential turmoil (Fuchs, 2013).

EA is an important concept in more than one respect. It can be helpful in understanding human behavior and especially the way society tries to deal with the basic anxieties. There is, for example, experimental evidence that xenophobia and cultural and political conservatism increase when people are confronted with their mortality (Solomon, Greenberg, & Pyszczynski, 2004). EA may also help to understand psychopathology. People with mental health problems are more sensitive to the ultimate concerns of life, sometimes because they have been confronted with these concerns as a result of traumatic experiences (Fuchs, 2013). An interesting question is whether EA can be seen as a factor that is related to psychopathology, but can be meaningfully distinguished. Research on death anxiety has shown that death anxiety is related to neuroticism, state as well as trait anxiety, and different diagnostic categories such as depression or generalized anxiety, but more research is necessary to clarify this relationship (Neimeyer, Wittkowski, & Moser, 2004). Elsewhere we proposed that EA could be an important transdiagnostic factor in the understanding of mental health disorders and that giving attention to EA can contribute to a person-centered perspective on

health and improvement of treatment methods (Bruggen, Vos, Bohlmeijer, & Glas, 2013). Sound measurement instruments are necessary for research projects to give ground to this claim (Noyon & Heidenreich, 2007). Therefore, we aim to perform a systematic literature review of psychometric instruments measuring EA. A brief introduction to EA will be given to delimit the terrain of this review and help to determine the content validity of the instruments at stake. We are well aware that a quantitative approach is controversial among adherents of the existential perspective on human functioning. Some eschew the use of standardized measurements in general, and regard these measurements as being in opposition to the flexibility and the inherent holistic character of human functioning. More about this issue can be found in Vos (2013) and Vos, Cooper, Craig, and Correia (in press). We start from the proposition that the combination of different scientific methods helps to get more insight in human functioning, and that a quantitative approach has its own advantages and limitations.

Existential Anxiety

When EA is related to the ultimate concerns or limitations of life itself, the question arises what exactly these concerns are. In the past decennia several models have been presented. We chose models that were developed by Tillich (1952), Yalom (1980), Glas (2003, 2013) and TMT (Koole et al., 2006), each describing between four and seven concerns. We chose these models because they give a formal description of a discrete set of existential concerns, and are at the same time diverse enough regarding time of creation and theoretical background. A short informal overview of the four models is given in Table 1, and the concerns are described below, also giving attention to other important theorists who did not give a formal classification of concerns. Three existential concerns are described in all four models: death, meaninglessness, and guilt. Two additional concerns are distinguished in two or three of the models: isolation and identity.

Death

Human beings are able to reflect on their mortality and the possibility of nonbeing. It is important to note that this anxiety is not limited to concerns about the concrete moment of one's life-ending, but primarily has to do with finitude, that is, the very fact that one's life will end at some (as yet unknown) point in time. Tillich (1952) differentiates between absolute and relative variants of existential concerns. He sees death anxiety as an absolute concern and *fate*, anxiety related to the contingency of happenings, as a relative one. Glas

Table 1. A Comparison of Models of Existential Anxiety.

Terror management theory	Tillich	Yalom	Glas
Death	Death and fate	Death	Death/unsafety
Meaninglessness	Emptiness and meaninglessness	Meaninglessness	Absurdity and meaninglessness/life as such
Guilt	Guilt and condemnation	Freedom	Doubt and inability to choose
Isolation		Isolation	Isolation
Identity			Loss of structure in the relation to oneself and the world

(2003) gives attention to *lack of safety*, the world as an unsafe place, a lack of physical protection, which seems closely related to death anxiety.

Meaninglessness

People are constantly trying to make sense of what occurs in their life, they search for meaning and try to find a purpose to live for. The work of Frankl (1962) is often mentioned in this regard. Frankl claimed that the search for meaning is inherent to the human condition. The experience that in this search no help can be expected from an external authority, and that one is responsible for giving one's own answers, may give rise to anxiety. Tillich (1952) sees *emptiness*, the breaking down of a once accepted belief system, as a relative variant of meaninglessness. Glas (2003) describes anxiety (or other negative feelings such as disgust) that is provoked by *existence as such*, the matter-of-factness of live. This can be seen as an extreme example of the experience of meaninglessness.

Guilt

In the context of EA, guilt has first to do with moral transgressions. Tillich (1952), for example, mentions that this feeling may result from not living up to one's own moral standards, and he distinguishes this from an absolute variant of guilt, namely *condemnation*, the feeling of not living up to presupposed universal standards. Within TMT guilt is seen as one of the *moral emotions* that also include *shame* (Tangney & Mashek, 2004). However, May (1950/1977) and Yalom (1980) see guilt from a different perspective, namely

as not fulfilling one's potential. They see life as a reservoir of endless possibilities, but this *freedom* has also a shadow side, because not all these possibilities can be chosen. That one still is responsible for choosing one's own path in life, can lead to *doubt and procrastination* (Glas, 2003).

In addition to death, meaninglessness and guilt, two concerns are mentioned in two or three models: isolation and identity.

Isolation

Man is an individual who cannot really know what someone else experiences, or how it would feel to be someone or something else. There exists an unbridgeable gap between one's own inner world and that of others. At the same time people feel a need to be connected to others. Longing for connectedness in the context of this gap in the understanding of other minds, may give rise to feelings of fundamental isolation and loneliness. All of our theorists mention isolation as one of the important limitations of life that may give rise to EA, although Tillich does not give it a formal place in his typology of anxieties.

Identity

In TMT, a fifth source of EA is mentioned, namely, identity, not being able to get full self-insight and experiencing unclear boundaries between self and non-self (Koole et al., 2006). Closely related to this is Glas's (2001, 2003, 2013) description of *anxiety related to loss of structure in the relation to oneself and the world*, which is assented to by Ratcliffe (2005, 2008/2011) who sees existential feelings as background feelings, for example, the feeling that something is *real* (or not) and feelings of *homeliness* or *estrangement*.

We do of course not claim that our summary of ultimate concerns is exhaustive, or that all existential experiences could be classified with it. We merely use it as a starting point in our search for relevant instruments, and think it provides a sensible and broad enough coverage of the phenomena under study. It must also be noted that all authors of the aforementioned conceptual models state that feelings related to different existential concerns strongly overlap and interrelate in the experiences of people. For example, when someone is aware of the contingency of occurrences (fate), the lack of a system of meaning that could have helped to deal with this contingency, can be felt at the same time (meaninglessness), whereas the world may also feel strange and uncanny (loss of structure), and the help of other people is

believed to be utterly insufficient (isolation). So what may seem sensible distinctions to the philosopher or psychologist, may be hard to find as distinct categories in everyday experiences or empirical data.

The question whether it will be possible to close this gap between theoretical descriptions of EA and empirical data, can be answered by using sound measurement instruments. This review intends to search for such instruments, whereby the following working definition will be used; *EA is the negative emotion which may accompany the awareness of the ultimate concerns of life: death, meaninglessness, guilt, isolation, and identity.*

In the past decades, several reviews of particular concerns have been published, for example, on death anxiety (Missler et al., 2011; Neimeyer, 1994, 1997, 2003; Wass & Forfar, 1982) guilt (Tilghman-Osborne, 2010), and loneliness (Cramer & Barry, 1999). Instruments with a comprehensive perspective, as intended in this article, may be helpful to gain insight in the mutual relationships between different concerns, their role in human functioning, and their importance in therapy processes. Such instruments may also be more applicable for screening for EA in clinical settings than instrument with a specific focus, such as death anxiety. Screening can be helpful for identifying patients who need additional help for dealing with EA.

Instruments focusing on positive existential experiences, such as hope or meaning, will not be taken into account. The reason for this is that our review focuses on the primary negative experience of the ultimate concerns of life, although individuals may of course secondarily reinterpret this and experience positive growth. Besides, in our opinion instruments focusing on positive existential experiences cannot be seen as measuring the opposite of negative existential experiences: A lack of positive meaning in life does, for instance, not necessarily imply that someone experiences life as fundamentally meaningless. For a review of meaning in life instruments, Brandstätter, Baumann, Borasio, and Fegg (2012) could be read. Park (2010) provides an overview of research on meaning in life and important conceptual questions.

Thauberger (1982) wrote a review of existential scales that were available at that time, describing instruments directed at measuring the confrontation/avoidance of existential issues, locus of control, sexuality and positive existential feelings such as hope, but none of these instruments addressed EA as described in our definition.

Objectives

The aim of this review is to provide an overview of instruments of EA along with information on the psychometric qualities. The following research

questions will be answered: (1) which instruments explicitly address EA as a broad concept, that is, measure two or more of the five existential concerns?; (2) how is EA defined in the development of the instruments, and which concerns are distinguished?; and (3) what is the psychometric quality of the instruments?

Method

Procedure

“Searches of three electronic databases (i.e., PubMed, Web of Science, and PsycINFO) were completed in November 2012, using the following search terms: EXISTENTIAL*, “ULTIMATE CONCERN,” DEATH, FREEDOM, MEANINGLESSNESS, ISOLATION, in combination with different terms regarding anxiety and test construction and validation. The working definition given above was used for choosing the search terms. Different combinations of search terms were tried out, striving for a balance between terms that covered the whole spectrum of the definition, and were still specific enough. For this reason GUILT and IDENTITY were, for example omitted, because they are used in many different contexts, and would give too many false positive results. In PubMed a search filter developed by Terwee, Jansma, Riphagen, and de Vet (2009) was used for the selection of psychometric publications. Figure 1 provides an overview of the procedure. Titles and abstracts of all publications were reviewed by the first author to select articles regarding the development or use of an EA instrument. To check the reliability of the selection, the second author studied a random selection of articles and decided on their eligibility. The interrater reliability coefficient kappa was 0.88 ($SE = 0.042$), which may be regarded as very good (Fleiss, 1981; Landis & Koch, 1977). Out of the selected articles the instruments regarding EA were selected, and a differentiation was made between instruments with a general perspective, as intended in this review, and other instruments that aimed at specific concerns such as death anxiety or guilt. Two experts in the field of EA were consulted, one of them a leading researcher in TMT, and the other in the research on meaning in life. Both experts confirmed that no relevant instruments were missed. However, after the completion of a former version of this article, a reviewer drew our attention to the Existential Study (ES; Thorne, 1973), and this instrument was also included.

The last step was to perform an additional search with the name of the instrument as search term and, as far as possible, by personal correspondence with the developers, to make sure that all studies using the instrument were

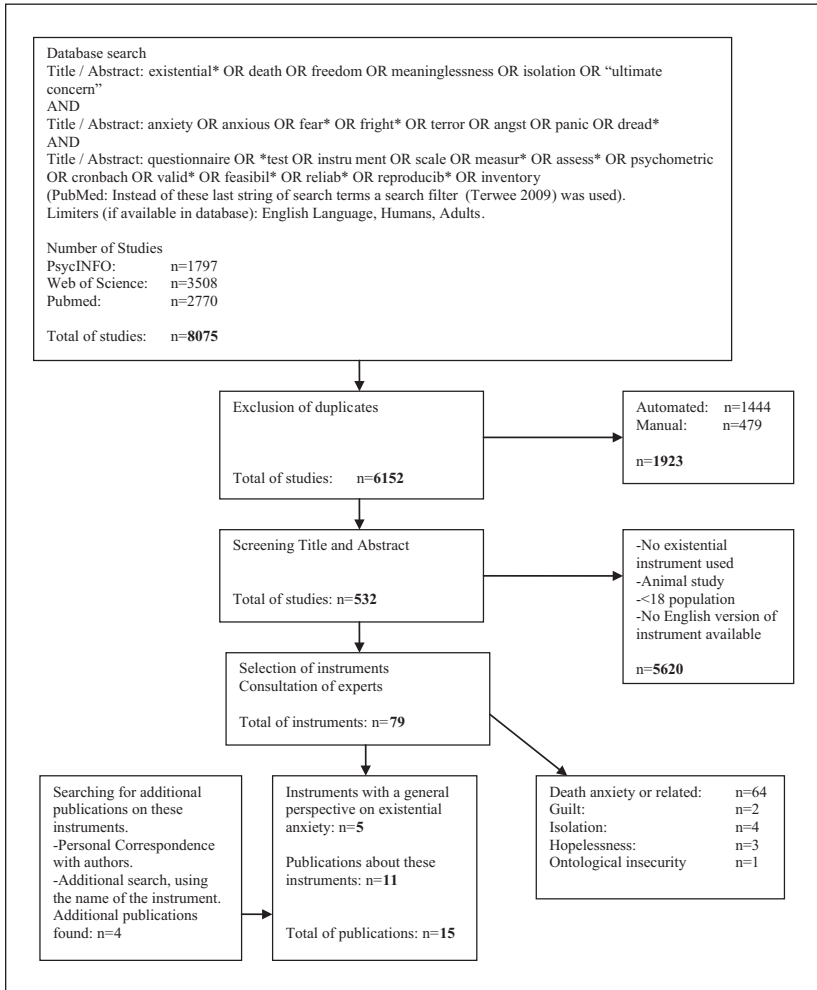


Figure 1. Summary of the selection procedure.

included. A complete description of the search strategy can be requested from the first author.

Exclusion Criteria

This study aimed at identifying instruments that provide information on the interrelatedness of the different forms of EA, and which also appear applicable

to clinical practice and research projects with adults. Therefore the following exclusion criteria were used:

- Population younger than 18 years, when a minor part of the study population was older than 18 years, the instrument was also included
- Subscales that are part of an instrument with broader scope
- Instruments that focused only on one concern, for example, death anxiety
- Single-item instruments
- Experimental tasks
- Qualitative instruments
- No English version available

After the selection of the instruments all studies regarding these instruments were included, also more recent published ones, or studies using a population younger than 18 years.

Evaluation of the Quality of the EA Instruments

For each instrument a publication was identified that provided the most extensive information on its development and validation. This key publication was used to evaluate the psychometric quality of the instrument. The studies were evaluated using the criteria of the COSMIN statement (consensus-based standards for the selection of health measurement instruments; Mokkink, 2010; Mokkink et al., 2010; Mokkink et al., 2013). These standards were developed in 2005 in an international Delphi study, and were tested and improved in the following years. Originally intended for the evaluation of patient-reported outcome measures, they are also applicable to the evaluation of other measurement instruments. Table 2 provides a summary of the COSMIN criteria and their meaning. As recommended by Terwee et al. (2012) a 4-point scale, *poor, fair, good, excellent*, was used, applying the worst score counts principle. This means that the lowest score attained describes the quality of a measurement property. When for example structural validity is evaluated, a too small sample (less than 5 participants per item) can lead to the classification *poor*, even when other aspects, like the applied statistics, are good enough. It is important to note that this scoring system is an evaluation of the methodology, and not of the instrument at stake. When an aspect of a study is poor, it only means that it cannot be used to evaluate the quality of the instrument. In this case, other publications about the instrument were searched for additional information.

Table 2. Consensus-Based Standards for the Selection of Health Measurement Instruments (COSMIN) Criteria.

Criterion	Meaning
Internal consistency	Show the items of a (sub)scale the expected interrelatedness?
Reliability	Are the results of the test consistent over two or more applications of the test?
Measurement error	Do changes in the outcome of the test reflect “true” changes in the construct?
Content validity	Are the items of the test an adequate reflection of the intended construct?
Structural validity	Do the scores of the test reflect the dimensionality of the construct?
Hypotheses testing	Does the (sub)scale relate with other measures in the expected way?
Cross-cultural validity	Do scores of the test converge in different cultural settings?
Criterion validity	Does the (sub)scale relate with a “gold standard” in the expected way?
Responsiveness	Are changes in the construct adequately reflected in the outcome of the test?
Interpretability	Is it possible to interpret changes in the outcome of the test in a way that is meaningful to the field of interest?

Results

Number of Hits and Identified Instruments

At first 8,075 articles were found, 1,923 turned out to be duplicates. The remaining 6,152 articles were screened for the use of an EA instrument, resulting in 532 articles in which 78 instruments were used. Figure 1 provides a flow diagram of the selection process. Most instruments were used to study death and dying, just a small number addressed one of the other existential concerns. Only five instruments used a comprehensive perspective on EA.

Introduction to EA Instruments

Next, the background and theoretical underpinnings of the five EA instruments are described, followed by an evaluation of their content in relation to our working definition and their psychometric quality. Table 3 gives a summary of the most important psychometric characteristics, and the quality of

Table 3. Psychometric Characteristics of Instruments With a General Perspective on Existential Anxiety.

	Existential Study	Existential Anxiety Scale	Existential Anxiety Scale	Fear Scale	Existential Anxiety Questionnaire
Key publication	Thorne (1973), Pishkin and Thorne (1973), Thorne and Pishkin (1973) ^a	Good and Good (1974)	Bylski and Westman (1991)	Walters (2000)	Weems, Costa, Dehon, and Berman (2004)
Number of items	200	32	20 (including 6 filler items)	18	13
Scaling	True/false	True/false	Five-point Likert-type scale	Respondent indicates whether a concern is applicable	True/false
Theoretical basis	Thorne (1970)	Frankl (1962)	May and Yalom (1989)	Walters (1998)	Tillich (1952)
Construct	Concerns about (1) meanings and worth of the self, (2) difficulties in getting along with other people, (3) the status of man in the world.	Feelings of (1) meaninglessness, also including (2) isolation and (3) death anxiety	Worrying about (1) death, (2) meaninglessness, (3) isolation, (4) nonbeing	Concerns about three strategies to manage existential fear: (1) attachment, (2) control, and (3) self-image	Anxiety which has to do with (1) fate and death, (2) emptiness and meaninglessness, (3) guilt and condemnation
Study population and country	193 Felons, 89 alcoholics, 155 philosophy students, 336 unmarried mothers, 159 psychology students, 338 psychiatric patients with a primary diagnosis of schizophrenia; total $n = 1,309^b$; USA	237 adults (undergraduates), no information about age, USA	63 adults (students and family); age: mean = 26.8, $SD = 12.0$; USA	98 males (inmates); age: mean = 34.68, $SD = 8.97$; USA	Study 1: 225 adults (students); age = 18-44 years, mean = 21, $SD = 4$ Study 2: 326 adults (students); age: 18-59 years, mean = 21, $SD = 4$; USA

(continued)

Table 3. (continued)

	Existential Study	Existential Anxiety Scale	Existential Anxiety Scale	Existential Anxiety Scale	Fear Scale	Existential Anxiety Questionnaire
Length of follow-up	N/A	N/A	One week	N/A	N/A	Two weeks ($n = 88$)
Dropouts + missing items and the way they were handled	N/A	N/A	N/A	N/A	Five of the approached persons were unwilling to participate and 8 failed to complete one or more measures and were dropped from the investigation	8 (Study 1)/35 (Study 2) participants had missing or incomplete data. Pair- or analysis- (when more than two variables were missing) wise deletion
Internal consistency	N/A	Internal consistency	N/A	N/A	Coefficient α Social Scale = .66, Control Scale = .72, Identity Scale = .69	Coefficient $\alpha = .71$ (Study 1), .76 (Study 2)
Study quality (conform COSMIN)	Poor (no Cronbach's alpha and no item-total correlations calculated)	KR-20 = .89 Poor (no factor analysis performed)	Poor (no Cronbach's alpha and no item-total correlations calculated)	Fair (small sample size)	Excellent	
Reliability	N/A	N/A	Test-retest: $r = .74$	N/A	Test-retest: $r = .72$ ($p < .001$; Study 1)	
Study quality (conform COSMIN)	Poor (only one measurement)	Poor (only one measurement)	Fair (not clear how missing items were handled)	Poor (only one measurement)	Good (good sample size and assumable that test conditions were similar but no evidence provided)	

(continued)

Table 3. (continued)

	Existential Study	Existential Anxiety Scale	Existential Anxiety Scale	Fear Scale	Existential Anxiety Questionnaire
				Walters (2001): test-retest after 2 weeks ($n = 30$); Total Scale = .74; Social Scale = .51, Control Scale = .63, Identity Scale = .66; no information about collection of these data	
Content validity	The authors constructed the items from patient communications. It is unclear how it was decided which items to include	The authors wrote 32 items and decided it to be the final set on the basis of the good internal consistency	Unclear how the content of the scale was developed	Unclear how the content of the scale was developed. Three items turned out to have undifferentiated relationships with their subscales	The underlying theory is extensively described. The first author developed 21 items and 8 items were deleted based on their item-total correlations
Study quality (conform COSMIN)	Poor (not assessed whether all items refer to relevant aspects of the construct to be measured, are relevant for the study population, and comprehensively reflect the model to be measured)	Poor (not assessed whether all items refer to relevant aspects of the construct to be measured, are relevant for the study population, and comprehensively reflect the model to be measured)	Poor (not assessed whether all items refer to relevant aspects of the construct to be measured, are relevant for the study population, and comprehensively reflect the model to be measured)	Poor (not assessed whether all items refer to relevant aspects of the construct to be measured, are relevant for the study population, and comprehensively reflect the model to be measured)	Poor (not assessed whether all items are relevant for the study population, and comprehensively reflect the model to be measured)

(continued)

Table 3. (continued)

	Existential Study	Existential Anxiety Scale	Existential Anxiety Scale	Fear Scale	Existential Anxiety Questionnaire
Structural validity	Based on explorative factor analysis the authors chose a five-factor solution that accounted for 27.3 % of variance	Assumed to be unidimensional	Assumed to be unidimensional	Confirmatory factor analysis was moderately supportive of the proposed three-factor structure; GFI = .86 and RMR = .07	Confirmatory factor analysis was moderately supportive to the proposed three-factor structure; GFI = .92 and RMSEA = .064 (Study 1) and GFI = .90 and RMSEA = .090 (Study 2)
Study quality (conform COSMIN)	Poor (other major methodological flaws, namely not giving information about significance levels)	Poor (no exploratory or confirmatory factor analysis performed)	Poor (no exploratory or confirmatory factor analysis performed)	Excellent	Excellent
Hypothesis testing (convergent/divergent validity)	Scores of different subgroups were compared	Correlation EAS and (1) need for achievement = $-.45$ ($p < .001$), (2) test anxiety = $.32$ ($p < .001$) (but negative direction hypothesized)	Correlation EAS and (1) Repression-Sensitization Scale = $.56$ ($p < .001$), (2) related ($p > .05$) (negative direction hypothesized)	Correlation of FS and a measure for outcome expectancies of crime exceeded significantly correlations of outcome expectancies and negative consequences of crime: $.42$ versus $.24$, paired t test: $t(8) = 4.82$ ($p < .01$)	Study 1: Correlation EAS and (1) Anxiety Scale $SCL90 = .54$ ($p < .001$), (2) Depression Scale $SCL90 = .61$ ($p < .001$)

(continued)

Table 3. (continued)

Existential Study		Existential Anxiety Scale	Existential Anxiety Scale	Fear Scale	Existential Anxiety Questionnaire
Study quality (conform COSMIN)	Poor (unclear what was expected)	Fair (poor description of constructs and properties of comparator instruments)	Fair (poor description of constructs and measurement properties of comparator instruments)	Good (expected magnitude of correlations or differences not stated)	Study 2: Correlation EAQ and (1) IDS = .41 ($p < .001$) and (2) PIL = $-.44$ ($p < .001$) Good (expected magnitude of correlations or differences not stated)
Overall evaluation of the quality of the primary publication. Sum of given qualifications	Poor: 5	Poor: 4	Poor: 3	Poor: 2	
		Fair: 1 Good: – Excellent: –	Fair: 2 Good: – Excellent: –	Fair: 1 Good: 1 Excellent: 1	Fair: – Good: 2 Excellent: 2

Note. COSMIN = consensus-based standards for the selection of health measurement instruments; EAS = Existential Anxiety Scale; EAQ = Existential Anxiety Questionnaire; FS = Fear Scale; RMSEA = root mean square error of approximation; GFI = goodness-of-fit index; RMR = root mean square residual. The evaluation boxes of the COSMIN statement are marked in bold. The following terms are used for evaluation: *excellent, good, fair, poor*. The reason for given a less than excellent evaluation is mentioned. Note that this aspect of the study may have other, less important, flaws that are not mentioned.

a. These three publications were taken together because they all report about the same study and were published together in one issue of the *Journal of Clinical Psychology*.

b. Primary publication provides incomplete information about age of respondents (mostly adult) and mentions that there were other, undefined, groups of respondents, probably causing the difference between the total n and the summation of the subgroups.

the studies in which the instrument was evaluated. Measurement error, cross-cultural validation, criterion validity, and responsiveness are not used in the following description, because they were described for none of the five instruments. All instruments were developed for scientific purposes, and none were evaluated regarding their clinical applicability.

The Existential Study (Thorne, 1973)

Thorne (1973) based the Existential Study (ES) on actual patient communications, collected in psychiatric practice. Using these data, he developed the 200 items of the ES, which he defined as a questionnaire “. . . designed to measure Self-concepts, Self-status, Self-esteem, Self-actualization, existential morale, demoralization, meanings of life, attitudes toward the human condition, and destiny, suicide, and existential success-failure” (Thorne, 1973, p. 387). The author also refers to a classification and nomenclature for existential state reactions (Thorne, 1970), but the relationship of this classification with the ES is unclear. The answer format of the ES is *true/false*. Examples of items are “Life seems to be passing me by,” “Things are rapidly going to hell in the world,” and “Sometimes I hate myself for the way I have messed things up in life.” Thorne (1973) tested the ES with 1,309 respondents from different groups: felons, alcoholics, philosophy students, psychology students, unmarried mothers, and patients with a primary diagnosis of chronic undifferentiated schizophrenia. Basic statistical information about the respondents, the procedure and the features of the test, like the reliability, is lacking or incomplete. Pishkin and Thorne (1973) performed factor analysis on the total sample and the different subgroups, resulting in a five-factor solution that accounted for 27.3 % of the total variance. Beforehand they hypothesized that the scale would reflect three underlying factors, namely concerns regarding the self, concerns regarding relations with others, and concerns regarding the world, but it is not clarified how the results of the (explorative) factor analysis relate to this expectation, leaving aside the question whether it makes sense at all to distinguish factors that account for small percentages of variance such as 2.5% or 1.8%. Thorne and Pishkin (1973) also compared the response patterns of the different groups of respondents. They found a different score pattern for schizophrenic patients, and lower scores for students compared with all clinical groups (including felons). Psychology students and philosophy students also showed differences, the latter showing less existential problems. The authors do not provide information on significance levels.

Evaluation. Besides the initial publications in *Journal of Clinical Psychology*, no references to the ES could be found, and the reason for this seems to be

clear. The ES seems to have found its end in ill-performed statistics and conceptual confusion, although the authors started their project in a way that was promising, namely by analyzing patient reports, and a strength of their study is that they used diverse groups of respondents. The authors refer to different classifications of experiences that may underlie their instrument, without clarifying how these classifications interrelate. The unclear theoretical foundation makes it also hard to say to which extent the ES resembles our definition of EA.

Existential Anxiety Scale (Good & Good, 1974)

Good and Good (1974) based their scale on the writings of Frankl (1962). They renamed his central concept of *existential vacuum* as EA. A clear definition lacks, but they give the following description: "Compared with neurotic anxiety, then, EA is more the product of despair than distress, of alienation than guilt, of emptiness than fear" (p. 72). The writings of Frankl were used to formulate the 32 items, which mainly relate to feelings of meaninglessness. A *true/false* response format is used. Examples of items are "I frequently have the feeling that my life has little or no purpose" and "I mostly feel all alone in the world." The authors tested the EAS with 237 respondents (undergraduates), correlated it with a test anxiety scale and an achievement motivation scale, and found the expected inverse relationships for need for achievement but not for test anxiety. Due to major flaws in the key publication, and the absence of supplementary information in other publications, not much can be said about its reliability and validity.

Hullett (1994) tested the EAS with 461 graduate and undergraduate students, and found the expected correlations with the Purpose in Life Scale, the Seeking of Noetic Goals Test, and the Beck Depression Inventory, but not with addictive behavior (instrument unknown), spirituality (instrument unknown), age, and number of close friends. Brookings and Serratelli (2006) used the scale as part of an instrument to measure well-being and found partial support for the expected relationship with instruments for positive illusions (Balanced Inventory of Desirable Responding Self-deceptive Positivity subscale and the How I See Myself Questionnaire).

Evaluation. Although different concerns as mentioned in our definition of EAS can be recognized in the items of the EAS, the renaming of *existential vacuum* as EA is in our opinion a conceptually confusing step. There can be more contexts in which EA emerges than situations of meaninglessness, and it is debatable whether the EAS is indeed an instrument with a broad perspective on EA. No information is given about the development of the content of

the scale, and it is unclear to what extent the content of the scale reflects different existential concerns, and whether it is a measure of anxiety at all, since anxiety or related terms are not used in the items. So its content validity is evaluated as poor. The authors presented their scale as preliminary, and although it was used in two other studies, the conclusion must be that it never surpassed this state.

Existential Anxiety Scale (Bylski & Westman, 1991)

Bylski and Westman (1991) developed a scale consisting of 20 items, including 6 filler items. The article mentions wrongly 28 items (A. S. Westman, personal communication, August 13, 2013). The scale expresses Yalom's description of EA, which has to do with death, freedom, meaninglessness, and isolation. The respondent is asked to indicate on a 5-point Likert-type scale to which extent he worries about this subject. Examples of items are "I worry about being lonely and without anyone to understand me" and "I worry about my own death."

The authors tested the EAS with 63 respondents (students and their family and friends), and found the expected correlations with a measure for defense style (Short Repression-Sensitization Scale) but not with religiosity (items from different scales). The test showed to be quite stable over a period of a week (product-moment correlation: .74).

Westman (1992) used the EAS in a study with 82 students, and correlated it with the Denial Questionnaire and the Conceptualization of Self and of Death Questionnaire. She found expected correlations with identity diffusion, despair about life, denial of death and less extension into tasks, but not with conceptualization of death, religiosity, egocentricity, and irresponsibility.

Evaluation. The EAS is based on one of the theories that was used to formulate our working definition, and different aspects of it can be recognized in the items. The authors claim that the scale has face validity, but the information about its development is sparse, and it is unclear how the different aspects of the underlying theory have contributed to the content of the scale. The EAS was tested with only small samples, and not much can be said about its psychometric qualities, except that it showed acceptable stability over two measures.

Fear Scale (Walters, 2000)

The Fear Scale (FS) was developed by Walters (1998) as part of his theory about delinquency and substance abuse: the lifestyle theory. The author states

that “the incentive for lifestyle development is grounded in fear” (Walters, 1998, p. 13), and he argues that this fear is the natural consequence of the conflict between the instinct to survive, and a constantly changing environment that challenges survival. This fear can according to Walters become existential in organisms with self-awareness. He mentions three categories that relate to the issue of survival: the ability to band together into groups, to predict and control the environment, and to have a sense of one’s identity and existence within a wider context.

The FS consists of 18 items, and the question whether these are or have been a personal source of apprehension or concern to the respondent. In correspondence with the three categories mentioned above, there are the following subscales: *bonding*, *orientation*, *identity*. Examples of items are “intimacy,” “commitment,” “weakness,” “vulnerability,” “disapproval,” “insignificance.” The respondent is asked to mark the items that are a personal concern to him, and these are summed up.

The author tested the scale with 98 federal prison inmates, and correlated it with newly developed instruments concerning outcome expectancies for crime and negative consequences of crime (Walters, 2000). The internal consistency of the EAQ seems to be sufficient (coefficient α Social Scale = .66, Control Scale = .72, Identity Scale = .69). Testing of the underlying three-factor structure using confirmatory factor analysis was only moderately supportive (goodness-of-fit index [GFI] = .86 and root mean square residual [RMR] = .07), after elimination of three items the scale showed better fit (GFI = .91 and RMR = .06). There is also some preliminary support for its construct validity, since the FS (version with three items deleted) did stronger relate to outcome expectancies for crime than a scale measuring (experienced) negative consequences of crime. This was predicted in the lifestyle theory, describing EA as an important factor in choosing criminal activities as an aspect of lifestyle preferences.

Walters (2001) also used the FS in a study with 135 male inmates, and found significant correlations with the State-Trait Inventory, and with both of its subscales when controlling for the other subscale, which was seen as preliminary support to the notion that existential fear is sensitive to both dispositional and situational based anxiety. In this article also information about its stability is given, although it is not clear how these data were collected (test–retest reliability after 2 weeks: Total Scale = .74, Social Scale = .51, Control Scale = .63, Identity Scale = .66).

Evaluation. The categories of the FS relate to three concerns of our working definition; isolation, identity, and death (with the impossibility to control the environment as one of its aspects). Interesting is that the author grounded his

theory about the important role of EA in evolutionary psychology. It is unclear how the items of the FS were developed, and whether they cover the underlying concept, so the content validity of the scale is poor as is its face validity: At first glance the scale does not look as an instrument of EA or even anxiety at all, for it is unclear what “being a personal concern” of items such as “intimacy” or “commitment” has to do with anxiety.

Existential Anxiety Questionnaire (Weems, Costa, Dehon, & Berman, 2004)

The Existential Anxiety Questionnaire (EAQ) (Weems et al., 2004) is based on the theory of Tillich (1952), and consists of 13 items which represent three domains that each contain a relative and an absolute existential concern: fate and death, emptiness and meaninglessness, guilt and condemnation. Examples of items: “I often feel anxious because of feelings of guilt” and “I often think about death and this causes me anxiety.”

The authors tested the EAQ with two samples of students (225 and 326, respectively) and found support for its test–retest reliability (.72) after a period of 2 weeks and its internal consistency (.71 and .76, respectively). It can be questioned whether it would have been better to measure the internal consistency for each of the three factors and not for the Total Scale, a point of view which would have led to a rating as *poor* for this aspect (Mokkink et al., 2013). As the factors were strongly correlated, we think it is plausible not to regard them as subscales and to mention only the consistency of the Total Scale. Mentioning the internal consistency of the factors would even not have been appropriate at all, as the number of items for each of the factors is very small. Confirmatory factor analysis was only moderately supportive of the proposed three factor structure: GFI = .92 and root mean square error of approximation (RMSEA) = .064 (Study 1) and GFI = .90 and RMSEA = .090 (Study 2). The scale correlated in the predicted way with instruments for anxiety and depression (Symptom Check List 90-R and Inventory of Depressive Symptomatology) and purpose in life (Purpose in Life Scale) and had incremental validity beyond the Purpose in Life Scale in predicting depressive symptoms.

Berman, Weems, and Stickle (2006) tested the EAQ with 139 adolescents (15–18 years) and found additional support for the factor structure of the EAQ and the hypothesized associations with psychological symptoms (Brief Symptom Inventory-18) and identity issues (Ego Identity Process Questionnaire). Scott and Weems (2013) tested the EAQ with 386 adults who were exposed to hurricane Katrina, and found support for most of the expected

correlations with PTSD (PTSD checklist) and suicidal ideation (Brief Symptom Inventory-18). The EAQ was also translated into Chinese, Slovak and Polish, but no data are available yet on psychometric evaluation (C. F. Weems, personal communication, February 25, 2013).

Evaluation. The categories of the EAQ are based on one of the models that was used in our “Introduction” section, so it is not surprising to find its content overlapping with three of the categories of our working definition: death, meaninglessness, guilt. The items of the final EAQ were selected on the basis of their item–total correlations. Although the author gives a broad description of the underlying theory we do not know much about the development of the content of the scale, and whether it covers the intended construct, so the content validity must be evaluated as poor. Promising evidence is given for the other psychometric aspects.

Discussion

We started this article with the research question, which instruments explicitly address EA as a broad phenomenon, how they define EA, and which concerns they distinguish. The conclusion is that in a period of four decades, only five instruments with a broad perspective on EA were published, and each of them was used in just a few studies. This may be related to the highly abstract and maybe also normative character of the concept of EA. The small number is in strong contrast with the large amount of instruments developed to measure death anxiety, supposedly the most concrete one of the ultimate concerns.

The instruments that were evaluated show considerable differences, although each of them is explicitly presented as an EA instrument. The EAS (Good & Good, 1974) focuses mainly on feelings of meaninglessness. The ES (Thorne, 1973) and the FS (Walters, 2000) use both their own conceptual model, although the latter reflects three of the concerns in our working definition: identity, death, and isolation. The EAS (Bylski & Westman, 1991) and the EAQ (Weems et al., 2004) most closely fit our working definition, but both do not cover all five ultimate concerns.

With respect to the psychometric quality of the instruments, Table 3 shows that all studies have one or more major flaws, that is, a rating of a property as *poor*. Most notable is the lack of evidence for the content validity. For each of the instruments it is unclear how the content was developed and, when described, it seems to be the work of one or more scientists, also the developer(s). Consultation of expert panels, or pretesting of an instrument with a sample of the intended population, could have given more strength to

the claim that an instrument indeed measures one or more existential concerns, and that all items were necessary to measure this concept in the intended population.

Next, there turn out to be differences between the older instruments, the ES and both EA scales, and their evaluation studies and the newer ones. The latter used more sophisticated methods to evaluate the reliability and structural and convergent/divergent validity. Both EA scales used students as research population, and the Fear Checklist was tested with inmates. Only the ES and the EAQ have been tested with different populations.

All instruments were tested in the United States, the country in which they were developed, and with an English-speaking population. EA can be expected to be a highly culturally sensitive topic, as turned out with research on death anxiety (Neimeyer et al., 2004), so it is questionable whether these instruments can also be used in other cultures. The same applies to the setting in which the instruments were tested. It is unclear whether instruments that were tested with normal adults, survivors of a hurricane, or inmates also can be used for clinical purposes, and how burdensome the completion will be for people with (mental) health complaints.

The conclusion of this review is that at this moment there is no instrument that completely covers the concept of EA, as defined in our working definition. We found some instruments that are relevant to the concept of EA, but none of them could be fully evaluated regarding its psychometric properties. The EAQ was the most thoroughly evaluated, and was also used in different contexts, with promising results.

Limitations

As far as known, this article is the first attempt to systematically evaluate scales with a broad perspective on EA, and this can be seen as a strength. Problematic is that we had to use our own definition of EA, because a gold standard is lacking. In our working definition, we have focused on anxiety, but it is obvious that other emotions also play a role, and maybe different emotional patterns are typical for each existential concern. So it is debatable whether our definition of EA was not too narrow. Another problematic aspect of our working definition is that the different forms of EA are quite diverse. Death, for example, may be seen as an objective “given of existence,” but for meaninglessness this is more complicated, because the question whether life “is” meaninglessness or meaningful depends on a personal judgment. Illustrative is a recent study (Heintzelman & King, 2014) in which is posited that most people experience life as meaningful.

Another weakness is that most of the selection of the articles was done by just one researcher, although a reliability check turned out well. The possibility that a relevant instrument would be missed, was reduced by checking the reference lists of the key publications, and by consulting experts in the field of existential psychology. Despite this systematic procedure, we missed one relevant instrument: the ES. We were made aware of the ES by one of the reviewers. One of the reasons we did not find the instrument with our search strategy, is that all publications about it lack an abstract. One other reason is that none of the titles of these articles contains the combination of search terms that was needed. This could have been prevented with a full-text search, but given the broad range of our search terms this was not feasible, because it would have induced enormous numbers of hits. We believe that our search strategy was sensitive enough to reasonably claim that we have included all relevant instruments. There remains a possibility that we missed instruments published in nonscientific journals, or journals that do not provide abstracts.

Suggestions for Further Research

As mentioned above, more attention should be given to the development of a new instrument before it is tested with larger samples. Another challenge is to clearly demarcate the concept of EA, whereby our working definition can be used as a starting point. Qualitative research, such as a Delphi project, or interviews with experienced experts, could help to get more conceptual clarity, and get input for further test development. Method bias is an important problem in social science research (Podsakoff, MacKenzie, & Podsakoff, 2012). This problem may occur when different constructs are measured with the same method, like self-report questionnaires. In this case, there is a risk that at least a part of the covariation between the constructs is caused by sharing the same method, because respondents may show the same response style on different instruments, for example, mainly giving affirmative answers. This has importance for our review, as most studies only presented correlations between different self-report measures. Weems et al. (2004) are the only authors recognizing the problem of method bias: They recommend using different measurement methods in future research. Podsakoff et al. (2012) mention some other remedies for method bias. The first is separating different measures in time or psychological proximity, for example by using different cover stories. This remedy may be of help, although the authors also admit that its effect is still uncertain. A proper formulation of the instrument is also important, because ambiguity of items will increase response bias. At last, there are also statistical procedures available that can help to diminish the influence of method bias.

Another problem in research on anxiety regards a specific response bias: The validity of EA instruments may be threatened by the fact that defense mechanisms play a profound role in coping with anxiety, and especially death anxiety, which is for instance shown by research on TMT (Koole et al., 2006). Because of defense mechanisms, it will not be clear whether low scores are caused by the absence of anxiety or by defense mechanisms. So it is preferred to cross-validate self-report instruments of EA with other measures of anxiety, such as galvanic skin response or behavioral measures, or to use instruments to control for defensiveness. Qualitative methods could also contribute to the interpretation of test results. It would, for example, be informative to interview high and low scorers on an EA questionnaire with regard to their experiences with anxiety, defense mechanisms, and attitude to the ultimate concerns.

An important aspect in the further development of EA instruments will also be to make them suitable for application in different cultural settings and in a clinical context. The development of clinically useful measures can, as was stated in our "Introduction" section, help to ground the claim that it is important to speak with patients about their feelings with regard to the fundamental concerns. Important questions in this regard are to which extent EA is distinguishable from psychopathology, and whether EA indeed adds to our understanding of psychopathology and treatment outcome. Another question is whether EA constructs are unidirectional or bipolar: "Experiencing meaning in life" does for instance not seem to be the opposite to "the meaninglessness of life," instead it appears to be a different phenomenon/dimension, as we mentioned in our "Introduction" section.

We recommend using the EAQ as a starting point in future research projects on EA, and expand its content, so it better covers the existential concerns as described in different theories. That expansion might be an option in future research, was already suggested by the authors of the original version (Weems et al., 2004). Validation in other cultures, and combining the EAQ with existing instruments for existential concerns—for example, death anxiety instruments—might give more ground to its validity, and clarify the emotional reactions related to different ultimate concerns.

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Author Biographies



Vincent van Bruggen works as a health psychologist at a treatment center for adults with anxiety and/or mood disorders at Dimence, Institute for Mental Health in Overijssel, the Netherlands. He is a PhD candidate at the University of Twente, the Netherlands, at the research group of Psychology Health and Technology. His research focuses on the study of existential anxiety, especially in relationship to psychopathology.



Joël Vos is a reader (associate professor) in counseling psychology at the University of Roehampton, London, UK. His current research focuses on the development and empirical validation of both humanistic/existential counseling interventions and psychometric instruments measuring the existential outcomes of such interventions. He is especially interested in how individuals cope with stressful life events and potential turning points in life, for instance, after cancer or emigration.



Gerben J. Westerhof is an associate professor in psychology at the University of Twente, the Netherlands. He directs the Dutch Life Story Lab that aims to contribute toward a person-centered approach in mental health care. His work takes place at the intersections of narrative, positive, and lifespan developmental psychology with a particular focus on meaning in life.



Ernst Bohlmeijer is a professor of mental health promotion at the University of Twente, the Netherlands. He has a special interest in humanistic positive psychology and life-story work. His research focuses on the development and evaluation of person-centered and narrative interventions in mental health care. He is a coeditor of the book *Storying Later Lives* with Gary Kenyon and Bill Randall, recently published with Oxford University Press.



Gerrit Glas is a professor of Christian Philosophy (Dooyeweerd chair) at VU University, Amsterdam, the Netherlands. He is also a psychiatrist and director of residency training in psychiatry in Dimence, Institute for Mental Health in Overijssel, the Netherlands. Among his areas of interest are concepts of anxiety, the interpretation of acts of evil and forgiveness, and philosophy of neuroscience and psychiatry.