

University of Twente

Determinants of existential anxiety

The effects of religious affiliation, gender and neuroticism on death anxiety

Bachelor thesis

Department of Psychology, Health & Technology

Index

Abstract	3
Introduction	4-9
Method	
<i>Participants and procedure</i>	<i>10</i>
Demographic questions	10-11
International Personality Item Pool – Neuroticism (IPIP-N)	11
Existential Concerns Questionnaire (ECQ)	11-12
Death attitude profile revised – anxiety subscale (DAP-Anxiety)	12
<i>Statistical analysis</i>	<i>12-13</i>
Results	14-15
<i>Religion and Death Anxiety</i>	<i>15</i>
<i>Gender and Death Anxiety</i>	<i>15-16</i>
<i>Neuroticism and Death Anxiety</i>	<i>16-17</i>
<i>Buffer effect of Religion</i>	<i>17-19</i>
<i>Gender as a moderator</i>	<i>20-22</i>
Discussion	23-28
References	29-31

Abstract

Death anxiety is a universal phenomenon, but high levels of death anxiety can have negative influence on people's life. The aim of this dissertation was to explore the effects of religion, neuroticism and gender on death anxiety in a cross-sectional sample from the general Dutch population. 389 respondents filled in an online survey with different questionnaires (ECQ, DAP-R and IPIP) concerning these four variables mentioned above.

Results showed that there is a strong positive relationship between neuroticism and death anxiety ($r = .498$). Furthermore it was found that neurotic women perceived more death anxiety than men, therefore an interaction effect between gender and neuroticism concerning death anxiety was found as well ($p = 0.046$). Additionally, a tendency that religion might act as an anxiety buffer against the relationship of neuroticism and death anxiety was examined. Finally, gender acted as a moderator on the relationship between neuroticism and death anxiety, which means that neurotic women suffered scored higher on death anxiety than men. During the analysis it came forward that neuroticism and gender seem to be stable determinants of death anxiety over time, while religion is an unstable one.

All in all, neuroticism and gender are both statistically correlated with death anxiety, while religion might act as an anxiety buffer.

Introduction

Stressful situations are known by all people around the world. One possible reaction to those situations can be anxiety (Hendriksen & Flora, n.d.). Anxiety in general can be characterized as worrying about negative outcomes of a situation and the feeling of tension coincidentally arising with physical symptoms like increased blood pressure (American Psychological Association, 2017). Because 'anxiety' is a broad term, literature describes several types of anxiety people need to cope with.

One of them is existential anxiety which addresses ultimate concerns such as death, meaningless and fundamental loneliness, therefore the focus of today's research is lying mostly on death anxiety (van Bruggen, Westerhof, Bohlmeijer & Glas, 2014). Death anxiety is characterized as the helplessness or emotional discontent when someone is confronted with death. Basically, there are two different types of death anxiety. Firstly, the anxiety about the death of oneself and secondly anxiety about the death of others (van Bruggen et al, 2014).

Death anxiety in general is a universal and normal phenomenon which is experienced by almost everybody in life (Letho & Stein, 2009). The fear of death can be beneficial for acceptance, learning and growth as well as enhancing meaning in life. If it is present in more extent, however, there can be consequences like ambivalence towards the own body or disorders concerning eating and self-mutilation. Additionally, personal relationships can be disrupted as well as sexual intimacy because the physical body is serving as a reminder of death (Letho & Stein, 2009). Furthermore, mental disorders can be consequences of death anxiety, like somatic symptoms which may result in visiting doctors more often, scanning the body more frequently and requesting medical tests more often in order to identify health problems earlier (Iverach, Menzies & Menzies, 2014).

Additionally, panic disorders seem to be a common consequence of death anxiety. These patients mostly fear the death of a heart attack and therefore visit the doctor more frequently than necessary. Another possible negative consequence can be the development of compulsive

tendencies, like compulsively washing hands, because these people report that they fear life-threatening diseases, like HIV. These phobias are all linked to specific situations or objects that might carry the potential to death or harm (Iverach, Menzies & Menzies, 2014).

In addition to that, van Bruggen, Vos, Bohlmeijer and Glas (2013) described that people having somatic diseases, which can result in having a short life expectancy or people with chronic pain, confront themselves with question about existential anxiety, in which death anxiety plays a role as well. These people think about their disease in general, possible limitations and finally their own death. Until now, diseases like for example depression were known as being associated with death anxiety of people, but it also seems important to address people who in general ask themselves questions about the own existence (van Bruggen, Vos, Bohlmeijer and Glas, 2013). Although nearly everybody will be confronted with death anxiety once in their life, Yalom (2008) described that death anxiety is not getting enough attention in the literature of psychotherapy. Therefore, this survey study focuses on a topic which needs to get more attention.

While nearly everybody will experience death anxiety to some degree at certain points in time, there are several studies which found relatively stable individual differences concerning the fear of death. Previous studies showed that women tend to score higher on death anxiety than men. Letho and Stein (2009), for example, showed that the responses to death anxiety of men were ‘withdrawing emotions’, whereas their female counterpart responded with ‘increased compassionated responses’. A possible reason can be that men and women behave as culturally expected stereotypes because females are socially seen as caring and being responsible for other people, while males are more independent and display strength (Letho & Stein, 2009). The study of Neimeyer and Fortner (1995) also showed that women tend to express themselves more than men (Saeed & Bokharey, 2016). In addition to that, men were repressing and avoiding death related thoughts more often in comparison to women. Therefore, a possible reason can be that society may expect males to hide their emotions more than females.

Furthermore, Neimeyer and Fortner found that these findings were also supported in other socio cultural contexts, like women from Pakistan, who expressed more anxious emotions than males (Saeed & Bokharey, 2016). Research comparing nursing students from western and eastern cultures found that there was a significant difference in death anxiety and anxiety in general between these two cultures. Students from western culture scored lower on death anxiety and general anxiety than students from eastern culture (Abdel-Khalek & Tomas-Sabado, 2005). These findings can be connected to the fact that different socio cultural contexts consist of different religions which might have an influence on death anxiety. The relation between general anxiety and several aspects of religion as ‘overt behavior’ like going to church, synagogues or temples or the frequency of praying were all examined in many epidemiological studies (Sturgeon & Hamley, 1979). Previous studies found that women who went to church more than once a month had a lower score on the construct ‘general anxiety’ in comparison with women whose attendance was less frequent (Sturgeon & Hamley, 1979). It was also shown that there is a negative relation between religious attendance and distress. Therefore, it can be concluded that religion operationalized as church attendance can act as a buffer on stressful events, including anxiety. On the other hand, a study of Hertsgaard and Light’s (1984) showed that Catholic women scored significantly higher on the construct ‘general anxiety’ than women of another affiliation.

Hence, it seems important to make a distinction between ‘religious affiliation’, which describes the type of religion people belong to, for example being a Protestant and ‘religiosity’, the degree of being religious, including if they believe in god, reading religious texts, praying and attending religious services (Chow, 2017).

A study concerning death anxiety showed that people who are more religious tend to be more active in religion services and participation which can act as an anxiety buffer because these people ‘are more likely to have a stronger social support network’ (Chow, 2017). Another study confirmed these findings and showed that persons who are strongly involved in religious

functions and have stronger religious convictions and attachment, have lower death anxiety because they interpret the Bible literally, like that there is a life after death (Templer, 1972). These explanations can possibly be reasons for why religion might act as buffer effect on death anxiety.

Contradictory to these findings, Wilson and Miller (1968) found that non-religious people had a lower score on measures of fear and anxiety. Thus, it is not evident that religious people in general are less anxious about death than people who are not religious at all.

Obviously, there are different studies with contradictory results concerning a correlation between anxiety and religion in general, religiosity and religious affiliation. Therefore, it is important to perform more research on the relation between religion and death anxiety in order to get a clear view about the relation between these two constructs. Furthermore, current studies examining determinants of death anxiety have been performed several decades ago and in cultural populations different from the Netherlands. Therefore, this study is an important addition to already existing studies because it examines religious differences in relation to death anxiety in a sample which may be more representative for current western Europe.

Besides gender and religion differences, personality also needs to be taken into account because previous research showed that this factor is of great influence concerning death anxiety. Especially neuroticism, one of the big five personality traits was previously found to be a predictor of the level of death anxiety (Frazier & Foss-Goodman, 1989). The theory of Hans Eysenck (1985) suggests that neuroticism is ‘a function of activity in the limbic system.’ Research showed that individuals with high neuroticism have a more reactive sympathetic system, thus they react more sensitive to stimulations of the environment. The environment can be defined by different circumstances, conditions or objects which surround someone or something (Klein, 2016). One study showed that people who show higher time urgency, aggressiveness and emotionality experience more death anxiety. Neurotic people tend to be more emotional than others, therefore, there is evidence that neurotic people are confronted

with higher death anxiety in comparison to people who are not neurotic (Frazier & Foss-Goodman, 1989). Neuroticism is therefore rated as one of the best predictors for death anxiety.

While death anxiety is a known problem, it is interesting to focus on this type of anxiety. Because many studies were already done concerning different factors affecting the fear of death, it is important to analyze different determinants like gender, personality, in the form of neuroticism and religion which might also influence the degree of perceived death anxiety. Several studies have already examined associations between religion and death anxiety, neuroticism and death anxiety and gender differences regarding the fear of death. Based on all these different studies it needs to be explored if religion can act as an anxiety buffer for neurotic people. Until now there is no research done if neurotic people can benefit from religion with regard to death anxiety or if gender acts as a moderator for the relationship between neuroticism and death anxiety, which is the primary purpose of this study.

Therefore, this cross sectional survey study examines different relationships which give new insights in the relationships of these four different constructs in contemporary western Europe, especially the Netherlands, where almost no research has been done so far. In addition to that, mental health care might profit from these findings. Furthermore, the construct 'neuroticism' in combination with death anxiety, religion and gender is not widely examined. With this study, neuroticism will get more attention and taking the following results into account, might help other people coping with death anxiety.

Therefore, the aim of this study is to explore individual determinants of death anxiety in a sample from the general Dutch population. Specifically, five research questions were examined.

RQ 1: Is there a relationship between religious affiliation and death anxiety?

RQ 2: Is there a relationship between gender and death anxiety?

RQ 3: Is there a relationship between neuroticism and death anxiety?

RQ 4: Does religion have a protective effect against the relationship between neuroticism and death anxiety?

RQ 5: Is the relationship between neuroticism and death anxiety moderated by gender?

In the following sections these questions will be explicitly analyzed.

Method

Participants and procedures

Data were used from a cross-sectional survey in a non-clinical sample which was conducted by van Bruggen et al (2017). A correlational design was used with different dependent and independent variables which will be described in detail later.

In total, there were 465 non-clinical participants who started the survey. Participants who demonstrated low effort, like not answering questions, incomplete protocols, giving incorrect answers to screening items, answering questions randomly by do not reading test questions carefully or when respondents needed less than 10 minutes, were excluded (van Bruggen, 2017). Totally, there were 76 respondents deleted, therefore 389 cases were usable for further analysis. 143 bachelor psychology course students from the University of Twente filled in the Existential Concerns Questionnaire (ECQ) together with questionnaires measuring death anxiety, intolerance of uncertainty, neuroticism, distress, meaning and life events (van Bruggen, 2017). The other 246 participants were recruited by the students. 154 surveys were completed by family members of the students, 55 by friends or acquaintances and the other 37 participants could not be assigned to a specific affiliation group.

Measures

The respondents completed different questionnaires after completing demographical questions. Furthermore, respondents also had to fill in a battery of validated questionnaires measuring neuroticism, distress, death anxiety, intolerance of uncertainty and meaning and life events. For the analysis in this study, only questions about demographics, neuroticism, death anxiety and religion were used.

Demographic questions. In the beginning of the survey, several demographic questions were asked. Two of these demographics are important in order to analyze the research

questions. First of all, participants could answer if they are a ‘male’, ‘female’ or ‘other’. The second important demographic is the religion. Participants were asked to which worldview they considered themselves affiliated the most, like ‘Christianity’, ‘Hinduism’, ‘Humanism’, ‘Islam’ as well as if they did not belong to any religion. Furthermore, respondents could select ‘others’ to explain in their own words to which religion they belong or if they believe in something else. For these people an extra text field was offered.

International Personality Item Pool – Neuroticism (IPIP-N). The IPIP-N is a subscale (ipip.ori.org; Donellan, Oswald, Baird, & Lucas, 2006) which is used in order to measure only the personality trait neuroticism. The scale consisted of ten items with a Cronbach’s alpha of .89. This means that the set of items are closely related to another, thus the internal consistency of these items is high. Each item was measured with a 5-point response scale from ‘totally agree’ to ‘totally disagree’. Some examples are ‘I get stressed out easily’, ‘I worry about things.’ or ‘I have frequent mood swings’. Therefore, being highly neurotic means having a high score on the items of the International Personality Item Pool – Neuroticism, thus at least ‘agree’ with the statements unless statements are formulated in a positive way, like ‘I am not easily frustrated’ and the second one was ‘I seldom feel blue’. Total scale scores were calculated as the mean of the ten items ($M = 2.58$, $SD = 0.80$).

Two scales were used to assess death anxiety, the Existential Concerns Questionnaire (ECQ) as well as the Death attitude profile revised – anxiety subscale (DAP- Anxiety).

Existential Concerns Questionnaire (ECQ). The ECQ consists of three subscales which are not all relevant for this study. Only the subscale ‘death anxiety’ was taken into account for further analysis. In total, there were seven items concerning death anxiety with a Cronbach’s alpha of .86. The statements were answered on a 5-point response scale from ‘never’ to ‘always’. Total scale scores were calculated for the statistical analysis ($M = 2.00$, $SD = 0.70$).

Death attitude profile revised – anxiety subscale (DAP- Anxiety). The second subscale about death anxiety is the DAP-R (Wong, Reker, & Gesser, 1994) which measures attitudes of people concerning death, like anxiety, acceptance or avoidance. The items were translated into Dutch by Spenkeliink and Doosje (2010). The subscale consists of seven items, like ‘Death is no doubt a grim experience’. Respondents could answer on a 5 point-Likert scale from 1 (never) to 5 (always) with a Cronbach’s Alpha of .89. Total scores were calculated as the mean of the seven items ($M = 3.11$, $SD = 1.33$).

Statistical analysis

For analyzing the data, the IBM SPSS statistic program was used. All analyses for the dependent variable death anxiety were performed separately with both the ECQ and DAP-R subscale.

To examine if there was a relationship between religious affiliation and death anxiety, an independent t-test was conducted. In order to have two different conditions, religious and non-religious, the variable ‘worldview’ was recoded and a dummy variable, named ‘Religion’ was created. Christianity, Buddhism, Hinduism, Islam and relevant ‘others’ answers were recoded as the condition being religious, whereas ‘Humanism and ‘I do not feel religious’ was coded as being not religious (religious= 1, non-religious 0).

To measure if there was a relationship between gender and death anxiety, another t-test was executed. For this, females were coded as 1 and males coded as 0. Thirdly, a correlational analysis was performed in order to identify if there was a relationship between the dependent variable ‘death anxiety’ and the independent variable ‘neuroticism’. A Pearson correlation was used because a histogram showed that the data was normally distributed. According to Cohen (2013) a weak correlation is if $r < .30$, a moderate correlation if r is between 0.30 and 0.50 and a strong correlation if $r > .50$. To measure if religion has a protective effect against the relationship between neuroticism and death anxiety a moderation analysis was conducted to

predict the value of death anxiety, based on the value of being religious and non-religious. To examine if the relationship between neuroticism and death anxiety is moderated by gender, another moderation analysis was executed. As described by Baron and Kenny (1986), a multiple regression analysis was executed for both. The regression was made with a predictor, moderator and an interaction term. If the interaction term is significant, a moderation effect is present. The independent variables of both moderation analysis were standardized into Z scores in order to avoid multicollinearity. For all analysis, a p value of < 0.05 is considered significant.

Results

Table 1 shows an overview of the main characteristics of the participants. 133 of the respondents were men (34.2 %) and 254 women (65.3 %), 184 were from Dutch nationality, whereas 178 (45.8%) were of German background. The other participants were from various countries all over the world.

Table 1. *Characteristics of participants*

Characteristics	Experimental Group (N=389)
Age	
Minimum	19
Maximum	84
Mean (SD)	40.1 (17.3)
Gender; N, (%)	
Male	133 (34.2)
Female	254 (65.3)
No answer	2 (0.5)
Religiosity, N, (%)	
Christianity	189 (48.6)
Humanism	23 (5.9)
Buddhism	20 (5.1)
Islam	12 (3.1)
No religious affiliation	129 (33.2)
Other	16 (4.1)

Furthermore, there were different religions represented. Slightly around one half of the participants affiliated themselves with Christianity ($n = 189$, 48.6%) and around one third was not religious ($n = 129$, 33.2 %). Humanism and Buddhism were represented by 23 (5.9 %) and 20 (5.1 %) participants.

On average the respondents were around 41 years old ($SD = 17$). The oldest participant

was 84 years old and the youngest 19 years. A histogram showed that there was a bimodal age distribution with one peak around the ages of 39 to 64 and another peak around the ages of 19 to 24. This can possibly be because most frequently students filled in this survey, which might explain the second peak around the ages of 19 and 24. Furthermore these students asked their parents and other relatives which, in comparison to students around this age, can be around an age of 39 to 64.

Religion and Death Anxiety. Analyzing the first research question ‘Is there a relationship between religious affiliation and death anxiety?’ showed that there was not a significant difference in the scores for religious (M= 2.00, SD= .69) and not religious (M= 1.99, SD= .71) participants ($t(387) = 0.169, p = .89$), when measuring death anxiety with the ECQ questionnaire. Therefore, it is shown that there is no relationship between religion and death anxiety. A similar non- significant difference was also found when measuring death anxiety with the DAP-R ($t(387) = .147, p = .88$.) as it is described in table 2 below.

Table 2. Relationship Religion and Death Anxiety (ECQ and DAP-R).

	Religious	Non-Religious	t (df)	p
ECQ	2.00 (0.69)	1.99 (0.71)	0.145 (387)	.89
DAP-R	3.10 (1.29)	3.12 (1.40)	0.147 (387)	.88

Gender and Death Anxiety. In order to answer the second research question ‘Is there a relationship between gender and death anxiety?’ a t-test was executed. Results showed that there is a statistical significant relationship between gender and death anxiety measured with the ECQ, ($t(385) = 3.93, p < .001$). Similar associations were found with the DAP-R, ($t(385)$)

= 3.57, $p < 0.001$). Women scored significantly higher on death anxiety on both, the ECQ and DAP-R, than men. An overview of the scores is given in table 3.

Table 3. Relationship Gender and Death Anxiety (ECQ and DAP-R).

	Female	Male	t (df)	p
ECQ	2.09 (0.69)	1.80 (0.67)	3.93 (385)	< .001
DAP-R	3.29 (1.34)	2.79 (1.24)	3.57 (385)	< .001

Neuroticism and Death Anxiety. To answer the third research question ‘Is there a relationship between neuroticism and death anxiety?’ a Pearson correlation was used. Analysis showed that the variables death anxiety (measured with the ECQ questionnaire) and neuroticism are significantly and moderately correlated ($r = .496$, $N = 384$; $p < .001$). Therefore, it can be concluded that there is an almost strong positive relationship between neuroticism and death anxiety. This correlation is shown in a scatterplot below. The second scatterplot also shows a similar significant and almost strong correlation between neuroticism and the death anxiety construct measured with the DAP-R ($r = .405$, $N = 384$; $p < .001$).

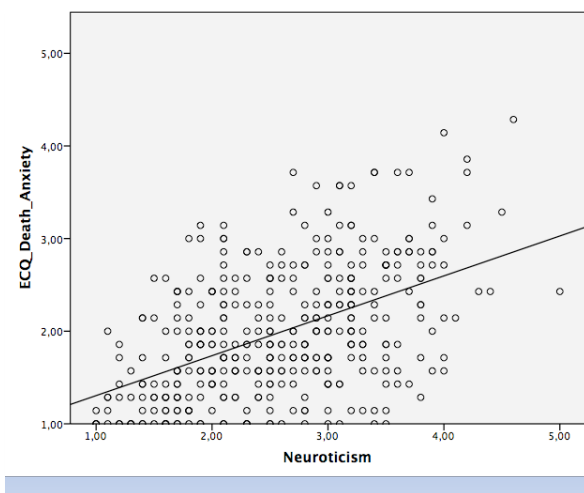


Figure 1. Relationship between Neuroticism and Death anxiety (ECQ)

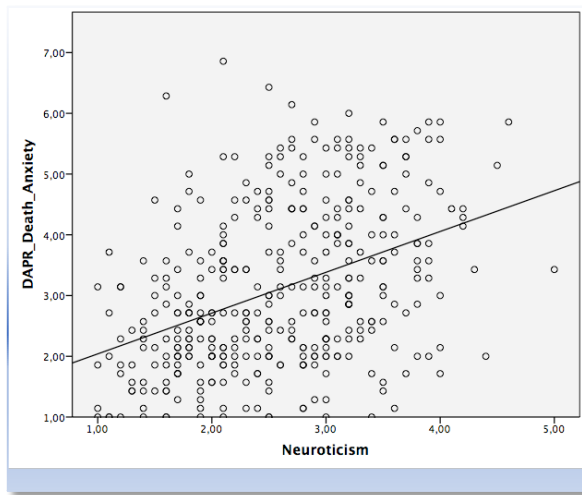


Figure 2. Relationship between Neuroticism and Death anxiety (DAP-R)

Buffer effect of Religion. In order to analyze the fourth research question ‘Does religion have a protective effect against the relationship between neuroticism and death anxiety?’ a moderation analysis showed that there was no significant protective effect of religion.

Table 4. Buffer effect of Religion (ECQ).

	B	SE (B)	β	t	p
Neuroticism	.583	.071	.587	8.252	< 0.001
(Z-Score)					
Religion	.017	.44	.017	0.375	.708
(Z-Score)					
Neu x Rel	-.149	.090	-.117	-1.649	.100
(Z-Score)					

$R^2 = .25, F = 42.55, p < 0.001$

However, there was a tendency ($p = .100$) and an interaction effect can be graphically shown in figure 3 below. There are two lines, a continuous one, which shows the results of non-religious participants and one broken line, which is for religious people. The continuous line shows that non-religious people who score low on neuroticism have less death anxiety than

religious people who score low on neuroticism. However, non-religious people with a high score on neuroticism score higher on death anxiety than religious people. Therefore, the relationship between neuroticism and death anxiety is stronger for non-religious people than for religious people. Hence, religion might act as an anxiety buffer for neurotic people.

Additionally, another correlation analysis showed that there is a stronger significant correlation between death anxiety and neuroticism when being non-religious ($r = .587$) than religious ($r = .438$) which confirmed the findings above.

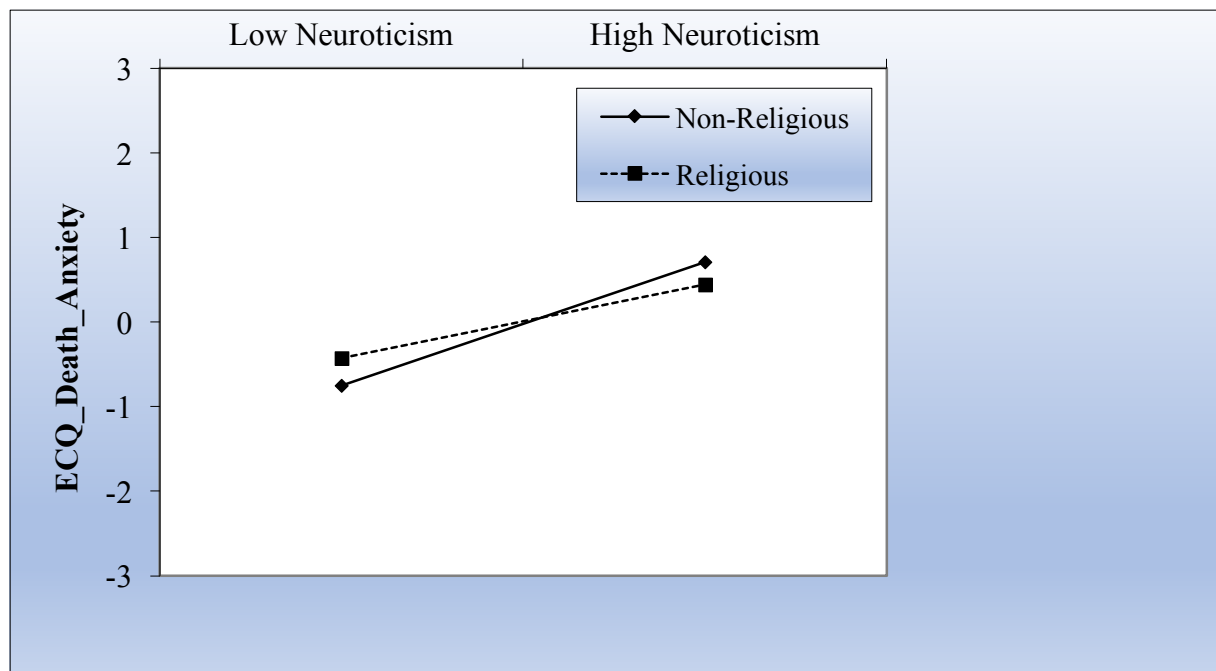


Figure 3. *Interaction effect Neuroticism and Religion (ECQ)*

Nearly the same associations came forward testing Death Anxiety with the DAP-R ($p = .114$).

Table 5. Buffer effect of Religion (DAP-R).

	B	SE (B)	β	t	p
Neuroticism (Z-Score)	.494	.074	.498	6.641	< 0.001
Religion (Z-Score)	.003	.046	.003	0.059	.953
Neu x Rel (Z-Score)	-.151	.095	-.119	-1.584	.114

$R^2 = .17$, $F = 25.87$, $p < 0.001$

Figure 4 shows the tendency of a buffer effect of religion measuring death anxiety with the DAP-R.

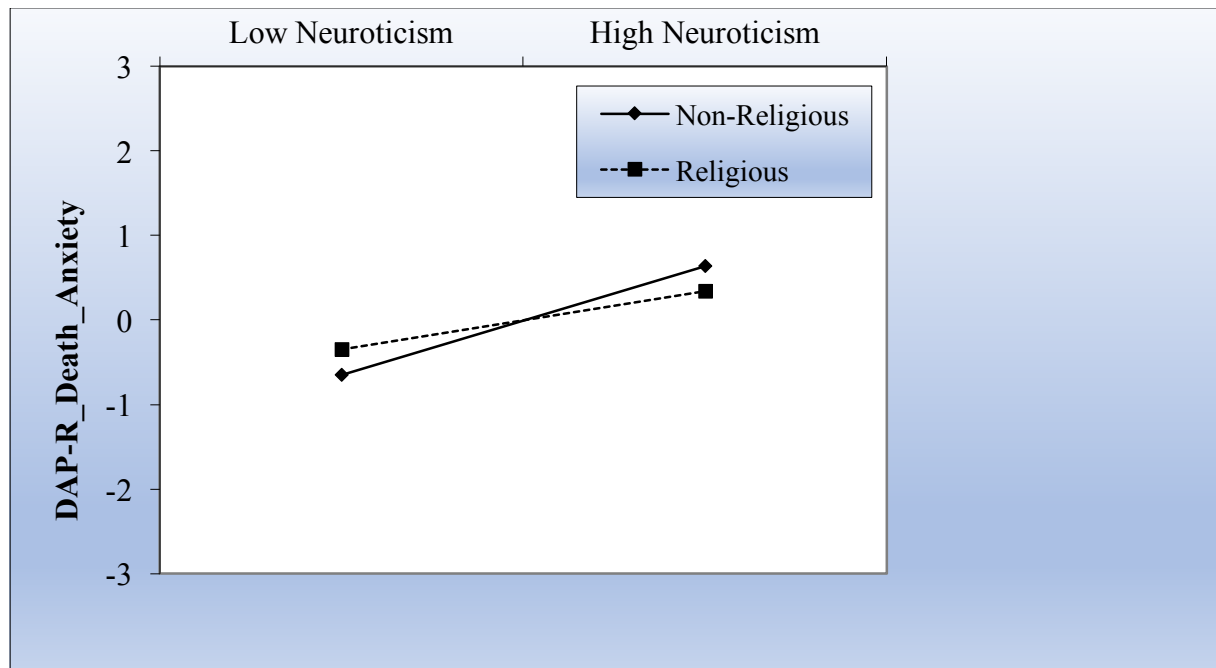


Figure 4. *Interaction effect Neuroticism and Religion (DAP-R)*

Gender as a moderator. The analysis of the last research question ‘Is the relationship between neuroticism and death anxiety moderated by gender?’ showed that there is no significant interaction effect measuring death anxiety with the ECQ questionnaire, however again, a tendency is given ($p = .083$).

Table 6. Interaction effect Neuroticism and Gender (ECQ).

	B	SE (B)	β	t	p
Neuroticism (Z-Score)	.601	.081	.607	7.388	< 0.001
Gender (Z-Score)	.000	.102	.000	-0.001	.999
Neu x Ge (Z-Score)	-.173	.100	-.135	-1.737	.083

$R^2 = .25$, $F = 42.73$, $p < 0.001$

Figure 5 shows the interaction effect of neurotic women and men concerning death anxiety measured with the ECQ which is statistically not significant.

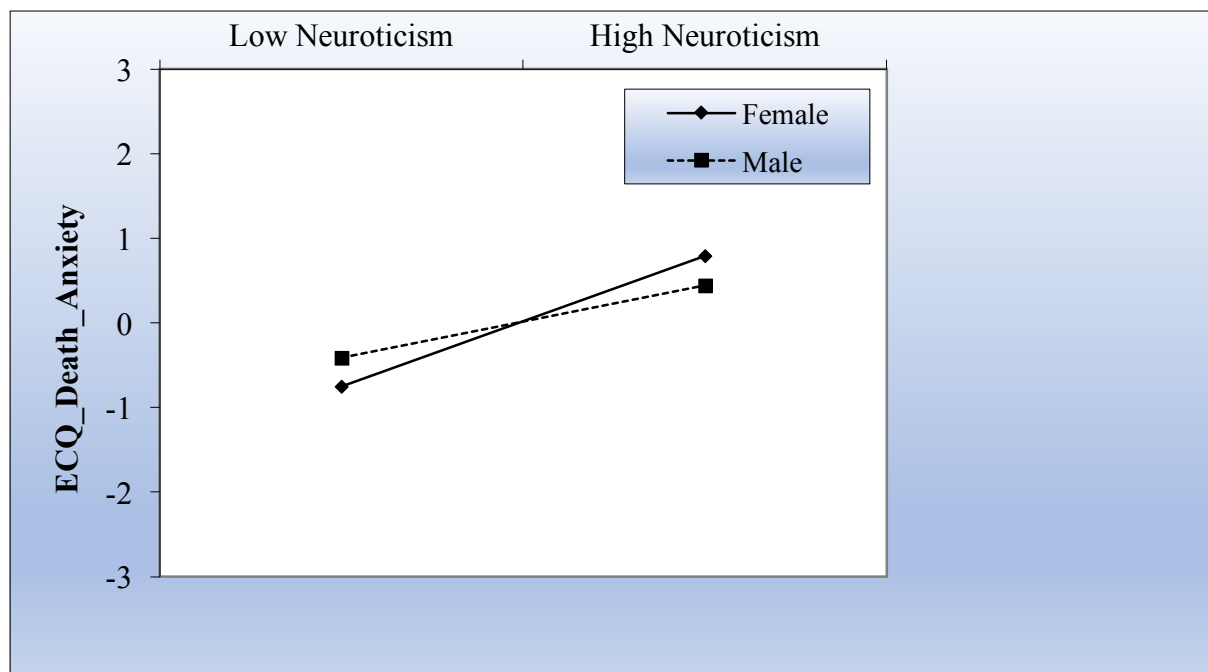


Figure 5. Interaction effect Neuroticism and Gender (ECQ)

However, measuring death anxiety with the DAP-R showed that there was a significant interaction effect between gender and neuroticism concerning death anxiety ($p = 0.046$). Therefore, neurotic women tend to suffer more from death anxiety than neurotic men.

Table 7. Interaction effect Neuroticism and Gender (DAP-R).

	B	SE (B)	β	t	p
Neuroticism	.528	.086	.533	6.171	< 0.001
(Z-Score)					
Gender	.021	.107	.010	.199	.842
(Z-Score)					
Neu x Ge	-.210	.105	-.164	-2.005	.046
(Z-Score)					

$R^2 = .17$, $F = 26.30$, $p < 0.001$

The continuous line in figure 6 shows results of female participants, while the broken line shows results of males. The graph shows that females who score low on neuroticism perceive less death anxiety than men, however women who are higher neurotic also score higher on death anxiety than men. Therefore, it can be concluded that the relationship between death anxiety and neuroticism is moderated by gender.

A correlation analysis confirmed these findings. There was a stronger correlation between death anxiety and neuroticism in females ($r=.575$) than in males ($r=.414$) as described above. The following figure illustrates these results.

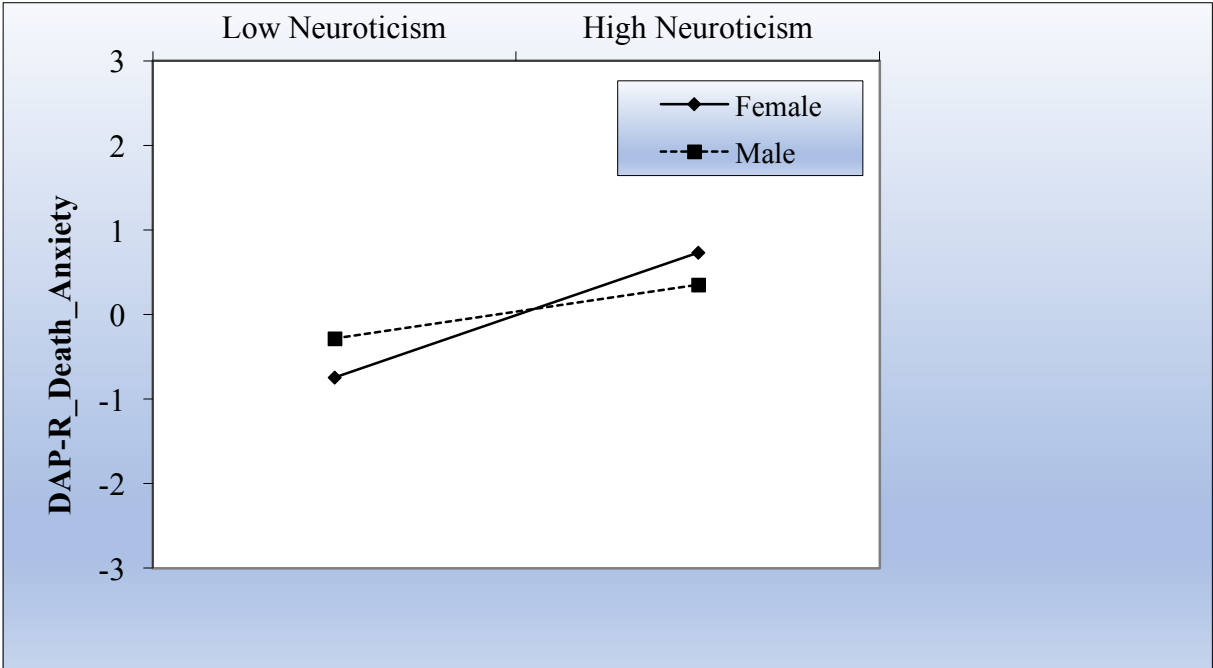


Figure 6. Interaction effect Neuroticism and Gender (DAP-R)

Discussion

This study showed that there is a relationship between gender and death anxiety, neuroticism and death anxiety, but no relationship between religious affiliation and death anxiety. Furthermore, a tendency of religion acting as a buffer against the relationship between neuroticism and death anxiety and an interaction effect between neuroticism and death anxiety moderated by gender was found.

As in previous studies was described, the current findings showed that there is a significant relationship between gender and death anxiety and neuroticism and death anxiety. Women tended to report more death anxiety in comparison to men, as measured by two validated scales. This difference between females and males might be influenced by societal norms. People may still have the opinion that men need to be strong, protective and more inaccessible than women. Women are often more seen as caring and sensitive. Therefore, several studies showed that there is a difference in death anxiety between both genders as it also came forward in this study. Another possible reason for higher death anxiety scores can be, as described by Letho & Stein (2009), that women express themselves more than men. Even if the fear of death is measured in an online survey and not an interview, it is possible, that men hide their thoughts and emotions while filling in the questionnaire (because society expects them to) which can result in giving honest answers to death anxiety related questions less often than women. Even if it is guaranteed that the data will be anonymous, people might think about ‘what if the online survey is not as anonymous as it should be?’. On the one hand, in this days and age, people get information about hacked and abused data nearly every day. Even if people promise to use the data only for anonymous analysis, some people might still be uncertain about it and therefore try to adapt answers that in case will not lead them to be in uncomfortable situations. On the other hand, it might also be the case that men answer death anxiety related questions subconsciously different than women. It might already be institutionalized that men are less anxious than women and that people expect them to be like that and especially do not

show or admit that they are anxious. Another reason can be social desirability, which means that respondents give answers to questions like others think it would be favorable. Therefore, bad behavior will be under-reported and good behavior will be over-reported. This can be explained as a response bias to the questions in the online survey.

Neuroticism appeared to be the best predictor of death anxiety in the current study. As expected, there is a strong relationship between these two constructs which might have something to do with neurotic people being more emotional than people who are less neurotic. Fear can therefore result in extreme behavior because people who are neurotic tend to be more sensitive to stimulations (Klein, 2016). If a neurotic person therefore has the tendency to, for example, be afraid of dying, the fear of death might result in greater extent in comparison to somebody who is less neurotic. Another possible reason can be that the sense of anxiety of neurotic people is greater than people who are not neurotic. This means that people, for example, experience the same trigger, but their reactions will be different from each other, because neurotic people experience triggers more intensive than others. This suspicion can be underpinned by Matthews (1998) who described that a high score of neuroticism means that the individual experiences ‘anxiety, anger, envy, guilt and depressed mood’ more intensive than people with a score of neuroticism beneath the average.

Additionally, previous literature showed that research questions about neuroticism and death anxiety and female gender and death anxiety are positively correlated. In contrast, the findings on the association between religion and death anxiety were striking. According to the terror management theory, which partly describes that the motivation of people is to maintain a socially supported worldview in order to reduce intense anxieties, the expectation was that there would be a significant difference in death anxiety between non-religious people in comparison to people who are religious (Baldwin and Wesley, 1996). However, no difference was found between people who did and who did not affiliate themselves with a religion.

During the analysis, the role of religious affiliation became apparent. Only one question

about religious affiliation was asked, namely which religion participants feel affiliated with. In order to answer the research question carefully, it would have been interesting to have asked to which extent they believe. If, for example, they are active in a religious organization, if they go to church regularly, if they pray regularly or if they do other things which are connected to being an active creditor. The extent of religion could be important because research showed that active religious people have a stronger social network which might act as a buffer against death anxiety (Chow, 2017). People who are strongly involved in religious functions also might internalize religious texts, like the bible, more than others (Templer, 1972). The 'life after death' is an aspect which might influence religious people as having not that great death anxiety because after life something positive will happen to them. Therefore, death not only has negative but also positive qualities. Hence, future research could add questions about how religious people are and not only one question about their religious affiliation.

Consistent with this research question, the fourth research question, if religion acts as a buffer against death anxiety, is interesting to examine. Although, no significant buffer effect of religion against death anxiety was found, there was a tendency that religion might act as a buffer. It can possibly be that, taking previous suggestions into account, like measuring religious affiliation in a more proper way, a significant relationship would be found. Additionally, it can also be concluded that there is simply no relevant relationship between religion and death anxiety or that religion simply did not act as an anxiety buffer. To confirm that this is the case, religious affiliation still needs to be measured in a more extensive way.

The last research question about gender differences concerning the relation between death anxiety and neuroticism confirms an interaction effect between gender and neuroticism. Gender has an influence on the relationship between neuroticism and death anxiety as women tended to have more death anxiety when being more neurotic than men. As already described, a correlation between gender and death anxiety as well as a correlation between neuroticism and death anxiety was found. Therefore, it was expected that the last research question would

be confirmed as well. When neurotic people, who tend to be more anxious, are women, who also tend to be more anxious, the combination 'neurotic-female' was expected to score higher on death anxiety than the combination 'neurotic-men'. The reason is that men tend to be less anxious than women, therefore neurotic men were also expected to score lower on death anxiety than neurotic women. When trying to give an explanation, one possible reason can be that, as already described, the higher neurotic someone is, the more death anxiety he or she will perceive. In addition, women tend to express themselves more. When neurotic people are expressing themselves more often and women tend to express themselves more than men, the combination of these two constructs, being neurotic and being a woman, means that death anxiety will be higher than in neurotic men. Analysis confirmed these findings because a stronger correlation was found between death anxiety and neuroticism in females than in males.

When taking all research questions and their results into account, it came forward that religion does not seem to play an important role in death anxiety. In both research questions including the variable religion, no correlation as well as no buffer effect (only a tendency) was found. However, research questions including the variables neuroticism, death anxiety and gender showed significant correlations and moderation effects.

Despite some problems with the item measuring religion, a strong positive aspect are the instruments used in this survey. The ECQ, IPIP and DAP-R are well validated questionnaires with a high Cronbach's Alpha. Therefore, these instruments measure what they need to measure, with items that are closely related to another. Another positive aspect was the large sample size of the survey. Although, there was a bimodal age distribution, nearly every age which might deal with death anxiety was represented in the sample. It would have been better to search for random people around the Netherlands instead of asking students to recruit their friends and family members because then respondents are nearly around the same age. Age differences can have influence on the results because the older people are, the more present anxiety of death will be. Older people suffer from psychological and physical problems and

most of them deal with thought about their own death because their health or age might be an indicator of sudden death or death in general (Fortner, Robert and Neimeyer, 1999). Young people are not thinking about their own death that much because mostly they are healthy and do not have present problems which might indicate death in the next few years. Young people might rather be anxious about death of others, like death of their grandmother or grandfather instead of their own one. Furthermore, more women than men were participating as well as many German people, wherefore findings cannot be generalized to the Dutch population. However, a positive aspect was that the number of total respondents was high. Having many participants has the advantage that there is enough 'power' to show existing relationships, as we could see in research question three, the relationship between neuroticism and death anxiety. But it can also be negative because the 'insignificant' can be made 'significant' when the sample size is too large.

Taking all results into account, one important finding is that women tend to suffer more from death anxiety than men. Therefore, one important question can be: 'Is death anxiety a risk factor for women?' The absolute difference between women and men does not seem big, but it would be interesting to further explore it in a clinical setting because it is a common problem in clinical settings and as described by Yalom (2008), death anxiety is not getting enough attention in the literature of psychotherapy. Psychologists should be attentive and should take into account that women suffer from death anxiety more than men. But also in our daily lives, death anxiety seems to be an aspect which normally will not be discussed. Death anxiety can be seen as a problem for everyone, but as it came forward, more for women than for men. Maybe talking about how to cope with death anxiety and anxiety about the death of others would be a good alternative for people who suffer from these problems. Especially in clinical settings where panic disorders are a common disease pattern, death anxiety might need to be more addressed. Every patient should be asked about their anxiety, especially death anxiety

because otherwise death anxiety can be the cause for further psychological patterns. Therefore, it is essential to discuss how to cope with it.

Altogether, it is important to further analyze religion as a buffer for death anxiety because in this survey there is a noticeable tendency.

It came forward that most of the studies were conducted many years ago and most of them were not carried out in western Europe, with none in the Netherlands. When comparing old studies all around the world with this study, it is striking that the variables neuroticism, death anxiety and gender are still stable determinants over time. Even studies several decades ago already found relationships between these constructs as it was found now. Religion is the only variable which does not seem a stable determinant. This might be the case because the strength of religious affiliation is different in different countries.

Additionally, it is important to take death anxiety in general and especially in women into account, not only in clinical, but also in everyday live settings because death anxiety is a timely topic. Nowadays, depression is not only present in elderly, but even in teenagers. Around 10% of all teenagers suffer from depression once during their adolescence (Aware, 2017). One symptom of depression is the thought about the death of oneself. Therefore, death anxiety is a common problem which needs to be more addressed and examined, especially in women who tend to suffer more from death anxiety than men.

All in all, it is important to keep in mind that neuroticism and gender are both statistically correlated with death anxiety, while religion possibly acts as an anxiety buffer because a tendency is given, which needs to be explored in further studies.

References

- Abdel-Khalek, A. M., & Tomas-Sabado, J. (2005). Anxiety and death anxiety in Egyptian and Spanish nursing students. *Death Studies, 29*(2), 157-169.
- American Psychological Association, (2017). Anxiety. Retrieved March 02, 2017, from <http://www.apa.org/topics/anxiety/>
- Aware (2017). Coping with depression when you're young. Retrieved June 12, 2017 from <https://www.aware.ie/help/information/depression-and-young-people/>
- Baldwin, M. W., & Wesley, R. (1996). Effects of existential anxiety and self-esteem on the perception of others. *Basic and Applied Social Psychology, 18*(1), 75-95.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology, 51*(6), 1173 - 1180.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2013). *Applied multiple regression/correlation analysis for the behavioral sciences*. State: Routledge.
- Donellan, M.B., Oswald, F.L., Baird, M.B., & Lucas, R.E. (2006). The mini-IPIP scales: tiny-yet-effective measures of the big five factors of personality. *Psychological Assessment, 18*, 192-203.
- Fortner V., Robert A., Neimeyer, B., (1999). Death anxiety in older adults: A quantitative review. *Death studies, 23*(5), 387-411.
- Frazier, P. H., & Foss-Goodman, D. (1989). Death anxiety and personality: Are they truly related?. *OMEGA-Journal of Death and Dying, 19*(3), 265-274. ISO 690
- Hendriksen, A.M., Flora, P.E., (n.d). What is anxiety? Retrieved March 02, 2017, from <https://www.psychologytoday.com/basics/anxiety>

- Iverach, L., Menzies, R. G., & Menzies, R. E. (2014). Death anxiety and its role in psychopathology: Reviewing the status of a transdiagnostic construct. *Clinical psychology review, 34*(7), 580-593.
- Klein, S., 2016. 'Is the trait 'neuroticism' associated with a higher score on 'social support' for the mHealth application 'Runkeeper?'' Retrieved February 16, 2017
- Lehto, R. H., & Stein, K. F. (2009). Death anxiety: an analysis of an evolving concept. *Research and theory for nursing practice, 23*(1), 23-41.
- Matthews, G., & Deary, I. J. (1998). Personality traits Cambridge University Press. Cambridge, UK.
- Nederlands Jeugdinstituut (2017). Beoordeling van kwaliteit door de COTAN. Retrieved from <http://www.nji.nl/nl/Databank/Databank-Instrumenten/Beoordeling-van-kwaliteit-door-de-COTAN.html>
- Saeed, F., & Bokharey, Z.I. (2016, February 08). Gender Differences, Life Satisfaction, ist Correlate and Death Anxiety in Retirement. Retrieved from <http://medcraveonline.com/JPCPY/JPCPY-05-00280.pdf>
- Spengelink, S.J.C., & Doosje, S. (2010). *Humor, de attitude ten opzichte van de dood en doodsangst. [Humor, the attitude towards death and death anxiety]* (Master), Utrecht University, Utrecht.
- Sturgeon, R. S., & Hamley, R. W. (1979). Religiosity and anxiety. *The Journal of Social Psychology, 108*(1), 137-138.
- Templer, D. I. (1972). Death anxiety in religiously very involved persons. *Psychological Reports, 31*(2), 361-362.
- van Bruggen, V., (2017). The Existential Concerns Questionnaire (ECQ) – Development and Initial Validation of a New Existential Anxiety Scale in a Nonclinical and Clinical Sample.

van Bruggen, V., Vos, J., Bohlmeijer, E., & Glas, G. (2013). Over de plaats van existentiële thema's in cognitieve gedragstherapie. *Gedragstherapie*, *46*, 119-134.

van Bruggen, V., Vos, J., Westerhof, G., Bohlmeijer, E., & Glas, G., (2014). Systemtic Review of Existential Anxiety Instruments.

Wong, P.T.P., Reker, G.T., & Gesser, G. (1994). Death attitude profile-revised. In R. A. Neimeyer (Ed.), *Death anxiety handbook: research, instrumentation and application* (pp. 121-148). New York, NY: Taylor & Francis.

Yalom, I.D. (2008). *Staring at the sun : overcoming the terror of death*. San Francisco: Jossey-Bass.