The relationship between loneliness, solitude, negative emotional dampening, depressive symptoms, life satisfaction and church attendance in religious older adults.

ABSTRACT **-** The aim of this study was to identify the relationship between several factors of psychological well-being (i.e. loneliness, depression and life satisfaction) and solitude, emotional dampening and church attendance in religious older adults. Using a sample of religious Dutch older adults, aged 70 and over, (N = 145) several hierarchical multiple regression analyses were carried out. Loneliness, depressive symptoms and life satisfaction were the dependent variables. Results showed that church attendance was associated with less loneliness, but it did not predict depression or life satisfaction. A strong bidirectional association was also found between loneliness and depression. However, both solitude and emotional dampening did not significantly predict any of the outcome variables. Furthermore, self-rated health came forward as a significant predictor of all three factors of psychological well-being.

In line with the previous literature, the findings highlighted the importance of church attendance, and the strong relationship between loneliness and depressive symptoms. Thus, both should be considered in the treatment of religious older adults, for example by encouraging them maintain their affiliations with religious communities. However, there were several key limitations, that are discussed along with the implications of these findings. Future research is necessary. Not only to further examine the shown associations found in this research, but also to evaluate the unexpected results (e.g. the absence of any influence of solitude and emotional dampening). In addition, future research should try to identify the processes behind the associations or lack thereof.

By Aafke Heude (3979784)

In association with Amber Staak, Ashley van Geel, and Eline van Basten

Department of Clinical Psychology, University of Utrecht

Supervision by Anneke Vedder

February, 2016

Content

Preface

This thesis is submitted as a fulfillment for the Master's Degree in Clinical and Health Psychology at the University of Utrecht. I chose this particular population, namely older adults, because I had recently discovered through several encounters that it was a group that fascinated me. I wanted to learn more about them and about the factors that were important to them or could be considered a problem. I worked in association with Ashley van Geel, Amber van Staak, and Eline van Basten under supervision by Anneke Vedder. We all looked at the relationship between psychological well-being (i.e. loneliness, depression and life satisfaction) and solitude and emotional dampening. Furthermore, we all chose a specific variable that would also be researched. I chose church attendance, partly because of my personal religious affiliation, but also because I was interested in what the influence would be of a variable that had probable been part of the whole life of the participants.

During the data collections I was surprised at the amount of personal stories that the participants shared. The interviews lasted on average 60 minutes, but during that time I found out about a whole life of those respondents. They told me about their families, what kind of schooling they had had, the jobs they were able to do and about their partners. I heard stories about what had made them laugh, cry of even what had made them angry. To me, this was a very special way to be able to do my masterthesis. It allowed me to be able to collect the necessary data for the research, but I was also able to get to know the participants, which made the results and this study so much more interesting.

Of course, I would like to thank all of the participants, who were willing to help us to conduct this study. Furthermore I wish to thank Anneke Vedder, my supervisor, who helped us from beginning to end to make this the best possible study and thesis. In addition, I would like to thank Henk Schut, the colleague of Anneke Vedder, for his welcomed and helpful comments and advice. Lastly, I want to thank my fellow colleagues, Amber Staak, Ashley van Geel and Eline van Basten for their inspiration for my personal study and the pleasant collaboration.

Aafke Heude

Utrecht, February 2016

1. Introduction

Over the last decades, a large and growing body of research has explored the relations between religiosity and religious participation in regards to psychological well-being in late life (e.g. Leondari & Gialamas, 2009; Smith, McCullough, & Poll, 2003; Rote, Hill, & Ellison, 2012). Multiple studies have revealed that variables, such as loneliness, depression, and life satisfaction have a large effect on psychological well-being in late life (Arslantaş, Adana, Ergin, Acar, & Kayar, 2015; Peerenboom, Collard, Naarding, & Comijs, 2015; Tikkainen & Heikkinen, 2005) and are considered aspects of it (Barkan & Greenwood, 2003; Peerenboom et al., 2015).

On one hand, older adults appear to be vulnerable to loneliness because they are highly susceptible to age-related changes and losses (Fry & Debats, 2002) and research has shown that loneliness can be considered a serious, common problem for older adults (Chen, Hicks, & While, 2013; Holvast et al., 2015; Dahlberg, Andersson, McKee, & Lennartson, 2015). Additionally, a large group of older adults suffer from depressive symptoms that have a negative impact on their quality of life, but who do not meet the criteria for the formal diagnosis (George, 2011). Even so, depressive symptoms are also considered a common problem among older adults (Borges, Benedetti, Xavier, & d'Orsi, 2013; Conradson et al., 2013; Croezen, Avendano, Burdorf, & van Lenthe, 2013; George, 2011).

However, on the other hand, results from previous research have been inconsistent and. For instance, Tikkainen and Heikkinen (2005) have found that older adults do not seem to suffer from feelings of loneliness or depression any more than younger adults. Furthermore, although older adults are confronted with declines in multiple life domains, their life satisfaction does not appear to decrease (McAdams, Lucas, & Donnelan, 2012). One possible explanation for this paradox, is religious participation, specifically church attendance (e.g. Swinton, 2001). However, other possible explanations may be found in the Socioemotional Selectivity Theory (STT; Carstensen, Isaacowitz, & Charles, 1999), a preference for solitude or in the phenomenon of emotional dampening.

To my knowledge, no previous research has studied all these variables in one study or has explored their combined ability in predicting psychological well-being. Hence, the aim of the current study was to identify the relationship between several factors of psychological well-being (i.e. loneliness, depression and life satisfaction) and solitude, emotional dampening, and church attendance in religious older adults aged 70 and over in the Netherlands.

1.1 Psychological well-being

First of all, loneliness, which has been defined as the perceived discrepancy between one's desired and actual social relationships (Cohen-Mansfied, Hazan, Lerman, & Shalom, 2015; Shiovitz-Ezra, & Leitsch, 2010) has an estimated prevalence in older adults that varies between 7% and 49% (Savikko, Routasalo, Tilvis, Strandberg, & Pitkälä, 2005). In fact, the true prevalence may be even higher given the stigma associated with loneliness, which means that people may not admit to being lonely (Pinquart & Sörensen, 2001). Second, the prevalence of depressive symptoms ranges from 18% in Denmark to 36% in Spain in persons aged 50 or over (Castro-Costa et al., 2007). Lastly, life satisfaction is defined as a subjective expression of well-being and successful aging (Mhaolain et al., 2012).

There are several socio-demographic factors that are associated with these factors of psychological well-being. For example, gender has been shown to predict greater loneliness and depression, with women being more at risk for loneliness (Chen et al., 2013; Cohen-Mansfield et al., 2015; Dahlberg et al., 2015; Hazer & Boylu, 2010) and related to higher levels of depression (Borges et al., 2013; Prince, Harwood, Blizard, Thomas, & Mann 1997).

Other socio-demographics that have been shown to be related to loneliness and depression are age, marital status, educational level, economic level, living arrangements, and health status (Borges et al., 2013; Chen et al., 2013; Cohen-Mansfield et al., 2015; Dahlberget al., 2015; Hazer & Boylu, 2010; Kato, Zweig, Schechter, Barzilei, & Atzmon, 2015; Prince et al., 1997). The socio-demographic factors associated with life satisfaction also include sex, age, marital status, education, financial status, place of residence and self-rated health (Mookherjee, 1998a; Mookherjee, 1998b; Sinnewe et al., 2015).

Furthermore, multiple studies have found that depression and loneliness are strongly related in older adults (Cohen-Mansfield et al., 2015; Holvast et al., 2015; Luo et al., 2012; Peerenboom et al., 2015; Tikkainen & Heikkinnen, 2005). For example, in a study by Johnson and Mullins (1989), depression has come forward as the most crucial variable in explaining the variance in loneliness. In addition, loneliness has frequently come forward as a risk factor and significant predictor of depression in older people (Adams, Sanders, & Auth, 2004; Blazer, 2003; Holvast et al., 2015; Peerenboom et al., 2015; Tikkainen & Heikkinnen, 2005). Higher loneliness is associated with more severe depressive symptoms and a poor prognosis (Holvast et al., 2015) and it contributes directly to depression (Adams et al. , 2004).

Finally, Mhaolain et al. (2012) stated that, in older adults, the key determinants of life satisfaction seemed to be mental health variables. They found that both depression and

loneliness were an independent determinants of life satisfaction. This was confirmed by Arslantaş et al. (2015), who reported a significant negative relationship between loneliness and all sub-scales of life satisfaction.

1.2 Church attendance

A general agreement is that religion has a positive effect on subjective well-being in late life (Barkan & Greenwood, 2003; Johnson, 1995; Levin, 1997). This association has been supported by several systematic reviews (Ellison & Levin, 1998; Swinton, 2001). Specifically, church attendance has come forward as being related to positive health outcomes (Rushing, Corsentino, Hames, Sachs-Ericsson, & Steffens, 2013) and it is commonly reported as a strong predictor of subjective well-being (Sinnewe et al., 2015). Religion is prevalent amongst older adults and 60% of those aged 75 or over attended their church in the last seven days (Koenig, 2007).

Research has shown that church attendance is reversely associated with loneliness (Rotte et al., 2012; Johnson & Mullins, 1989), namely a reduced likelihood (Gonnerman et al., 2008) and lower levels of loneliness (Koenig, McCullough, & Larson, 2001). Rote et al. (2012) studied a possible theoretical model and found that religious attendance may protect against loneliness in later life through the integration of older adults into a larger and more supportive social network, which has been discussed in several other studies (Barkan & Greenwood, 2003; Sinnewe et al., 2015).

Moreover, church attendance is often related to less depression in older adults (e.g. Adams et al., 2004; Blazer, 2003; Borges et al., 2013; Braam et al., 2014; Croezen et al., 2015; George, 2011; Hayward et al., 2012a; Nelson et al., 2002; Rushing et al., 2013). Not only does church attendance lower the risk of a depression (e.g. Braam et al., 2014; Croezen et al., 2013; Roh et al., 2015), but it is also associated with a reduced severity (Leondari & Gialamas, 2009; Smith et al., 2003; Hayward et al., 2012b). Lastly, religious involvement predicts higher odds of recovery (George, 2011).

Finally, church attendance consistently comes forward as a significantly associated factor with life satisfaction (e.g. Barkan and Greenwood, 2003; Frazier, Mintz, & Mobley, 2005; Idler, McLaughlin, & Kasl, 2009; Leondari, & Gialamas, 2009; Sinnewe et al., 2015). These results are found in different ethnic groups (Frazier, Mintz, & Mobley, 2005; Leondari, & Gialamas, 2009; Sinnewe et al., 2015) and when compared with other forms of religiosity (e.g. private religious activity), only church attendance appears to be associated with life

satisfaction (Leondari, & Gialamas, 2009). Again, a possible explanation for this association lies in the integration into a larger and more supportive social network (Barkan & Greenwood, 2003; Sinnewe et al., 2015).

1.3 Socioemotional Selectivity Theory

STT postulates that older adults typically require less social stimulation and interaction in comparison to younger adults. The theory predicts that people tend to focus on present, rather than on future goals, when they view their time as limited (Löckenhoff and Carstensen, 2004), which is very conceivable with older adults (McAdams, Lucas & Donnellan, 2012). This focus causes them to become increasingly selective in their choice of social interactions and thus makes them deliberately less socially active (Carstensen et al., 1999). Hence, STT highlights that being alone could be a deliberate choice among older adults, which confirms the necessity of distinguishing loneliness and being alone.

This distinction is often made according to Burger (1995), because if being alone is under the person's control it can also be experienced as positive or pleasurable (Hazer, & Boylu, 2010). This voluntary and welcomed form of aloneness can be conceptualized as solitude (Long & Averill, 2003; Rokach et al., 2004). There has been considerable less attention in social research to solitude (Long & Averill, 2003). Even though people generally spend more time alone in old age (Larson, 1990) and do not necessarily experience this more negatively (Long & Averill, 2003).

Additionally, STT postulates a selectivity in the emotional experiences in older adults. It predicts that negative emotional responses can be avoided by being more selective in social interactions, while the positive emotions can be improved (Carstensen et al., 1999). Gross et al. (1997) confirm this. They have found a decline in experience of negative emotions and increase in positive emotions in older adults. This decline in frequency and intensity of negative emotional experiences has been called emotional dampening (Gross et al., 1997) and has come forward in several more recent studies (Charles & Carstensen, 2010; Charles, Reynolds, & Gatz, 2001).

Emotional dampening may explain why many older adults experience depressive symptoms while not meeting the criteria for a diagnosis of depression, because depression amongst older adults might not be characterized by intense negative emotions (George, 2011).

1.4 The current study

As stated above, no previous research has studied all these variables in one study. Furthermore, the results regarding their individual association with factors of psychological well-being are still inconsistent or there is even a lack of research regarding the variable (e.g. for preference of solitude) or population (e.g. a Dutch study sample).

Hence, the aim of this study was to identify the relationship between loneliness, depression, life satisfaction, solitude, emotional dampening and church attendance in religious older adults aged 70 and over in The Netherlands. Based on the previously discussed literature and findings, the following hypotheses were tested: (1) loneliness is associated with lower life satisfaction and more depressive symptoms; (2) preference for solitude is associated with more life satisfaction, less loneliness and less depressive symptoms; (3) negative emotional dampening is associated with less depressive symptoms and less loneliness and; (4) church attendance is associated with less depressive symptoms, less loneliness, and a higher life satisfaction.

2. Methods

2.1 Sample

The sample consisted of 170 participants aged 70 years and over, with average age of 79.18 ($SD = 5.91$). Participants were excluded if they had insufficient skills of the Dutch language, marked cognitive problems and/or indicated that they were not religious. Based on these exclusion criteria 25 participants were excluded, leaving a sample of 145 participants. Socio-demographic characteristics of the final study sample are shown in Table 1.1.

2.2 Measures

To address all variables a structured interview was developed. All items and instruments were selected on the basis of the brevity of the instrument, the successful use in comparable studies and the available information on validity and reliability in the population of older adults. Furthermore, items and/or instruments were developed by the researchers if no suitable item or instrument was available. The format of the complete interview can be found in appendix I.

Table 1

The mean (M) and standard deviation (SD) or amount (n) and percentage (%) of the sociodemographic variables and self-related health.

Characteristic	*M* (*SD*) or *n* (%)
Age	78.99 (5.89)
Gender	
Women	97 (66.9%)
Men	48 (33.1%)
Living arrangement	
Independent living	106 (73.1%)
Assisted living	36 (24.8%)
Other (i.e. living in a residential group)	3 (2.1%)
Marital status	
Never married	7 (4.8%)
Married or cohabiting	69 (47.6%)
Widowed	61 (42.1%)
Divorced	8 (5.5%)
Education level	
Primary education	25 (17.2%)
Lower vocational education	76 (52.4%)
Medium vocational education	23 (15.9%)
Higher vocational education/university	21 (14.5%)
Socioeconomic status (SES)	
Low	39 (26.9%)
Medium	84 (57.9%)
High	22 (15.2%)
Religious affiliation	
Roman-Catholic	114 (78.6%)
Protestant Church in the Netherlands	7 (4.8%)
Reformed Church in the Netherlands	12 (8.3%)
Reformed	4 (2.8%)
Evangelicalism	6 (4.1%)
Other (i.e. apostolic and Mormon)	2 (1.4%)
Self-rated Health	7.19 (1.43)

Loneliness   A self-report version of the De Jong Gierveld Loneliness Scale (De Jong Gierveld & Kamphuis, 1985) was used to measure loneliness. The questionnaire consists of 11 items (e.g. I miss people around me) that are answered on a 3-point scale (i.e. yes, more or less, no). The maximum score is 11 and a higher score indicates greater loneliness. The items did not refer to age-specific situations or behaviors, thus the questionnaire can be used in all age groups (De Jong Gierveld & Kamphuis, 1985). The Loneliness Scale has a good reliability ($\alpha > .80$) and an adequate construct validity (Van Tilburg, & De Leeuw, 1991). In the current study the internal consistency was found to be acceptable ($\alpha = .82$).

Solitude   A Dutch translated version of the Preference for Solitude Scale (PSS) was used (Burger, 1995). A preference for solitude can be defined as someone's preference for spending time by themselves as opposed to a preference for interacting with other people when both options are available (Burger, 1995). The questionnaire consists of twelve statements and participants were required to select the one that best described them (i.e. "I have a strong need to be around other people." versus "I do not have a strong need to be around other people."). The PSS has an adequate reliability (Cramer & Lake, 1998). In the current study, it had an adequate internal consistency ($\alpha = .70$).

Emotional dampening   In the absence of a suitable instrument, item/scale development for emotional dampening was carried out by the researchers. A single item was used as a summary measure to asses perceived emotional dampening as a whole. In addition, a questionnaire was developed using multiple Visual Analogue Scales (VAS; Gift, 1989). The questionnaire consisted of 12 items; six positive daily situation (i.e. 'I get a present'), which composed the subscale Positive Emotional Dampening Scale, and six negative daily situations (i.e. 'I have to wait a long time'), which composed the Negative Emotional Dampening Scale. Participants were required to rate their feelings in those situations by marking their answer on a 15-cm line, anchored at 0% (very unhappy) and 100% (very happy). The situations were all measured twice, for the current situation and for when the participants were aged 40. The Scale can be found in Appendix II. The scores were calculated by subtracting the present VAS-score from the past VAS-score, with the total score ranging from -1200 to 1200 and a higher score indicated more emotional dampening. Unfortunately, in the current study the internal consistency of the Positive Emotional Dampening Scale was found to be questionable ($\alpha = .63$) and that of the Negative Emotional Dampening Scale poor ($\alpha = .50$) .

Depressive symptoms   Depressive symptoms were assessed using the Geriatric Depression Scale 15-item version (GDS-15; Sheikh and Yesavage, 1986). The GDS can be used as an interview and as an pen-and-paper survey (Conradson et al., 2013) and is designed specifically to measure depressive symptoms among older adults (Yesavage et al., 1983). The items are simple yes/no questions (e.g. do you feel happy most of the time?). The total score varies between 0 and 15, with a higher score indicating more depressive symptoms. The GDS-15 has proven to have an adequate construct validity and an acceptable reliability (α = .75; Friedman, Heisel, & Delavan, 2005). In the current study, the GDS-15 showed an adequate internal consistency (α = .70).

Life satisfaction   Life satisfaction was assessed using a single item, asking people to rate their life satisfaction in general on a scale from 1 to 10.

Church attendance   Church attendance was also measured with a single item. When participants indicated that they are religious, they were asked how often they still visited a service. Responses consisted of a 5-point scale: 0 (less than once a month), 1 (once a month), 2 (twice a month), 3 (once a week) and 4 (more than once a week).

Additional variables   Guided by the previous empirical literature regarding possible confounding variables, twenty questions were included in the interview to obtain socio-demographic information: age, sex, family status, living situation, marital status, nationality, socioeconomic status (SES), (former) occupation, level of education, self-rated general health and religious affiliation.

2.3 Procedure

The participants were enlisted between October and December 2015 in four different regions in the Netherlands (i.e. Den Bosch, IJsselstein, Roosendaal and Utrecht). The participants were obtained by handing out flyers in public spaces and through acquaintances of the researchers, applying a snowball method. All potential participants were contacted by the researchers to establish if they were willing to participate in the study, if so an appointment was made. Each interview was conducted in the participant's home and all participants provided written informed consent to participate. Respondents were allowed to

choose between self-administration, answering the questions verbally, or a combination of both. The first part of the interview was designed to investigate the participants' demographic characteristics. Subsequently, the main variables were assessed by the emotional dampening scale, the De Jong Gierveld Schaal, the GDS-15 and the Preference for Solitude Scale successively. The interview ended with two questions regarding self-rated health and life satisfaction. Most of the interviews were conducted with the interviewee alone. However, in some cases a spouse or family member was present. On average, the interviews lasted 60 minutes.

2.4 Statistical analyses

All analyses were conducted with the IBM Statistical Package for the Social Sciences (SPSS), version 20.0 for Windows and a *p*-value of less than .05 was considered to indicate statistical significance. First, descriptive statistics were performed to determine the distribution of the variables in this sample. Next, Spearman correlations were used to explore the relationship between variables of interest. In order to assess the relationships of the main variables of this study (e.g. solitude and church attendance) to life satisfaction, depression and loneliness, multiple hierarchical regression analyses were performed. The covariates that were used in the analyses were age, gender, living situation, income-based SES, marital status, level of education and religion.

3. Results

3.1 Descriptive statistics

The mean scores and standard deviations of the study sample on the dependent and independent variables are shown in table 2. All participants had the Dutch nationality. Only 7 participants (4.8%) still had a church attendance of more than once a week, while 40 participants (27.6%) attended church once a week. 10 participants (6.9%) attended their church twice a month and 16 (11.0%) attended once a month. Furthermore, 72 participants (49.7%) had a church attendance of less than once a month.

Table 2

Mean scores and standard deviations of the independent and dependent variables.

Variable	M	SD
De Jong Gierveld Loneliness Scale (loneliness)	1.42	2.24
PSS (preference for solitude)	5.48	2.69
Emotional Dampening (as a whole)	1.24	0.67
Negative Emotional Dampening	0.74	53.03
Positive Emotional Dampening	0.34	50.96
GDS-15 (depressive symptoms)	2.72	2.27
Life Satisfaction	8.07	1.06

3.2 Preliminary analyses

All intercorrelations between the measured variables can be found in table 3. There are several findings worth noting. First of all, contrary to the expectations, church attendance only correlated with loneliness ($r_s = .17$, $p < .05$) and not with depression or life satisfaction.

Second, also inconsistent with the expectations, both preference for solitude and negative emotional dampening did not correlate with any of the dependent variables. Thirdly, depressive symptoms correlated strongly with loneliness ($r_s = .42$, $p < .01$), as expected, and life satisfaction ($r_s = .36$, $p < .01$). Finally, as anticipated, life satisfaction and loneliness were also correlated ($r_s = .26$, $p < .01$).

3.3 Assumptions of the linear model

The distributional shapes of all the main variables were investigated in order to examine the assumption of normality. Although inspection of the histograms indicated normality for life satisfaction, emotional dampening and preference for solitude, those of the GDS-15 and the De Jong Gierveld Loneliness Scale were positively skewed. However no transformations were performed on these skewed data given the large sample size of this study.

Table 3

Intercorrelations for all measured variables

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1.	Gender	-													
2.	Age	**.20***	-												
3.	Living arrangement	**.17***	**.38****	-											
4.	Education level	**-.27****	-.16	.16	-										
5.	Socioeconomic status	-.16	-.09	**-.21***	**.26****	-									
6.	Self-rated health	-.01	-.05	-.05	**.18***	**.25****	-								
7.	Marital status	**.23***	**.21***	**0.23****	-.11	-.01	-.01	-							
8.	Religion	.03	-.12	-.05	.17	-.16	.01	.05	-						
9.	Church attendance	.10	**.18***	.06	.07	.04	.10	.14	**.27****	-					
10.	Loneliness	.13	**.27****	**.34****	**.21***	-.16	**-.22****	**.24****	-.10	**-.17***	-				
11.	Negative emotional dampening	**-.19***	-.02	-.16	.12	-.10	-.08	.07	.12	-.04	.02	-			
12.	Preference for solitude	-.00	.01	-.08	.05	-.02	-.09	.05	.09	-.12	.00	-.01	-		
13.	Life satisfaction	-.05	**-.27****	**-.21***	.00	.14	**.31****	-.08	.03	.04	**-.26****	-.13	.04	-	
14.	Depressive symptoms	.09	**.21***	**.19***	.12	**-.22****	**-.42****	.05	.06	-.13	**.42****	.06	.10	**-036****	-

*$p < .05$; ** $p < .01$

Furthermore, the scatterplots of all variables provided enough evidence for the assumption of linearity. Subsequently, after examining standardized residuals, Cook's distance and Mahalanobis distance no suggestion of outliers was found. In addition, based on the Durbin-Watson test the assumption of independent could be met. Lastly, both the assumption of homoscedasticity and multicollinearity were investigated and no evidence was found of any violation.

3.4 Regression analyses

As mentioned before, three separate regressions were done, with loneliness, depression and loneliness subsequently as the dependent variable. In each regression the control variables were entered in the first step: gender, age, living arrangement, marital status, level of education, SES, self-rated health and religious affiliation. In the second step, church attendance was entered. However, the third and last step differed. First, with loneliness, negative emotional dampening, preference for solitude and depressive symptoms were entered. Second, as outlined in the introduction: the direction of the relationship between loneliness and depression is still not clear. Therefore, loneliness was also entered into the model to predict depressive symptoms along with preference for solitude and negative emotional dampening. Lastly, with life satisfaction, all remaining main variables were entered in the last step (i.e. negative emotional dampening, preference for solitude, depressive symptoms and loneliness). A summary of the results are shown in table 4.

It was hypothesized that both preference for solitude and negative emotional dampening would predict less loneliness. However, while preference for solitude did have a negative relationship with loneliness, it wasn't a significant predictor or loneliness (β = -.09, $t(145) = -0.76, p = .18$) and neither was Negative Emotional Dampening (β = .01, $t(145) = 0.18, p = .90$). Furthermore, depressive symptoms were expected to predict more loneliness. In line with this hypothesis, depression was a significant predictor of loneliness ($\beta = .49, t(145) = 6.50, p < .001$). Finally, it was anticipated that church attendance would predict less loneliness. Consistent with this expectation, church attendance significantly predicted less loneliness ($\beta = .25, t(145) = 3.10, p < .01$).

Next, it was expected that loneliness would predict more depressive symptoms. As anticipated, loneliness was a significant predictor of depression ($\beta = .51, t(145) = 6.50$,

$p < .00$). In addition, preference for solitude was anticipated to predict less depressive symptoms, just as negative emotional dampening. However, neither one has shown to be a significant predictor of depressive symptoms (respectively $\beta = .10$, $t(145) = 1.41, p = .16$; $\beta = .04$, $t(145) = 0.57, p = .57$). Lastly, church attendance was expected to predict less depressive symptoms. Yet, contrary to this anticipation, church attendance did not significantly predict depressive symptoms ($\beta = -.16$, $t(145) = -1.92, p = .20$).

Moreover, both loneliness and depression were anticipated to predict a lower life satisfaction. In line with this expectation, depression was a significant predictor of life satisfaction ($\beta = -.17$, $t(145) = 2.73, p < .01$). However, loneliness was not a significant predictor ($\beta = -.27$, $t(143) = 1.64, p = .10$). Furthermore, preference for solitude was expected to predict higher life satisfaction, but the results showed that it was not a significant predictor ($\beta = .06$, $t(145) = 0.74, p = .46$). In addition, it was anticipated that church attendance would predict a higher life satisfaction, but church attendance did not significantly predict life satisfaction ($\beta = .70$, $t(145) = 0.82, p = .41$).

Finally, it is worth mentioning that living arrangement has shown to be a significant predictor of loneliness ($\beta = .30$, $t(145) =, p = .001$). Second, self-rated health turned out to be a significant predictor of all three dependent variables: loneliness ($\beta = .20$, $t(145) = -2.47$, $p = .02$), depressive symptoms ($\beta = -.40$, $t(143) = -5.04, p < .001$) and life satisfaction ($\beta = .33$, $t(145) = 4.04, p < .001$).

4. Discussion

4.1 Main findings

The present study investigated the relationship between loneliness, depressive symptoms, life satisfaction, solitude, emotional dampening and church attendance in religious older adults. First of all, self-rated health came forward as a predictor for all three outcome variables. Findings also showed a significant relationship between depression and loneliness, with both variables as a predictor of the other. Depressive symptoms were also a predictor of life satisfaction. Preference for solitude and negative emotional dampening unexpectedly didn't come forward as a predictor in any of the multiple regressions. Lastly, church attendance came forward as a predictor of loneliness. It did not predict depression or life satisfaction.

Table 4

Results of the three regression analyses: predicting loneliness, depressive symptoms and life satisfaction

Step/Predictors	Loneliness			Depressive symptomatology			Life satisfaction		
	b	B	ΔR^2	*b*	β	ΔR^2	*b*	β	ΔR^2
1. Controls			**0.24*****			**0.25*****			**0.19****
Gender	0.25	0.05		0.43	0.09		0.04	0.02	
Age	0.06	0.16		0.04	0.11		-0.03	-0.15	
Living arrangements	**1.33*****	**0.30*****		0.40	0.09		-0.28	-0.14	
Marital status	0.30	0.09		0.06	0.02		-0.03	-0.03	
Education level	-0.16	-0.07		-0.02	-0.01		-0.10	-0.09	
Socioeconomic status	-0.02	-0.01		-0.32	-0.09		0.09	0.06	
Self-rated health	**-0.31***	**-0.20***		**-0.63*****	**-0.40*****		**0.24*****	**0.33*****	
Religion	-0.06	-0.03		0.09	0.05		0.00	0.00	
2. Church attendance	**-0.39*****	**-0.25*****	**0.06*****	-0.25	-0.16	0.02	0.05	0.07	0.01
3. Additional factors			**0.17*****			**0.19*****			**0.11****
Negative emotional dampening	0.00	0.01		0.00	0.04		-0.00	-0.06	
Preference for solitude	-0.08	-0.09		0.08	0.10		0.02	0.08	
Loneliness	-	-		**0.51*****	**0.50*****		-0.13	-0.27	
Depressive symptoms	**0.48*****	**0.49*****		-	-		**-0.08*****	**-0.17*****	

*p < .05; ** p < .01; *** p < .001

This last result is partly in agreement with previous research, as it confirms the predictive relationship between church attendance and loneliness (e.g. Jonson & Mullins, 1989; Rotte et al., 2012). An explanation for this relationship is given by Barkan & Greenwood (2003). They explain that religious involvement increases social ties and it could work through the social support it may give.

This study challenges the supposed relationship between church attendance and depression and life satisfaction (e.g. Barkan, & Greenwood, 2003; Braam et al., 2014; Broyles, & Drenovsky, 1992; Croezen et al., 2015). While the measuring instrument can sometimes be an explanation for the absence of a relationship, the current study measured church attendance similar to most of the studies regarding this variable (e.g. Rotte et al., 2012; Barkan, & Greenwood, 2003; Braam et al., 2014). Thus, this does not seem a probable explanation. However, there are some studies who also did not find an association with church attendance (e.g. Koenig, 2007). Therefore, it could be that this association is not as significant as proposed in most studies.

In addition, the findings of the current study did not provide support for the socioemotional theory, as neither negative emotional dampening nor preference for solitude showed any significant association with loneliness, depression, or life satisfaction. However, it is important to note that conclusions drawn regarding negative emotional dampening must be considered carefully in view of the poor internal consistency of the scale that was used.

However, the findings of the present study was in line with the many researches regarding the relationship between loneliness and depression (e.g. Cohen-Mansfield et al., 2015; Holvast et al., 2015; Peerenboom et al., 2015). The previous literature could not provide an answer in terms of the direction of the relationship, which is why the association was studied both ways in the current research. While this study is also unable to provide any conclusions regarding the direction of the association, the findings have confirmed that both are a predictor of the other.

4.2 Limitations and future directions.

The veracity of any conclusions drawn based on these findings, must be considered in light of some limitations. First of all, data were collected at a single time and the study was limited to cross-sectional analyses. Thus, findings were unable to imply any causal relationships between the main variables and future studies should focus on determining these.

Moreover, most participants were recruited through a snowball method. This has some advantages, because this allowed the access to people who would otherwise have been difficult to reach and it established trust between the participants and the researchers (Atkinson & Flint, 2001). This, because the referrals were made by an acquaintance. However, it also caused only a specific group to be approached, which means that the truly lonely and socially isolated older adults might have not been reached. This could mean that the sample used in the current study is unrepresentative, which may account for the skewness of some data. Thus, future research should use a large, random sample to have a more representative sample.

In addition, several spouses were both participants. Seeing as they share the same environment and therefore cannot be considered independent subjects, this study did not meet the assumption of independent observations. This is a very important limitation to take into consideration for future research, where they should either refrain from using both partners or use better suitable analytical methods.

Furthermore, not all internal consistencies were adequate. As mentioned before, the Negative Emotional Dampening Scale had a poor internal consistency. Further research, using suitable instruments, should be able to provide better information regarding this construct. Fortunately, most of the instruments had an adequate internal consistency (Cramer & Lake, 1998; Friedman et al., 2005; Van Tilburg, & De Leeuw, 1991).

Lastly, there were two limitations regarding the interview. As outlined in the procedure, participants were allowed to choose their method of administration (i.e. self-administration, interview, or both). This was deliberately chosen, because it offered participants a more private way to answer sensitive questions. While this has a positive effect on the quality of the data according to De Leeuw (2005), it can also influence the participants more negatively. Data collection procedures can influence their motivation, accuracy in answering questions and their self-disclosure (Tilburg & De Leeuw, 1991). Second, the self-report scales cause the risk of social desirability.

4.3 Implications

Despite these limitations, several implications can be made based on this study. First, the strong association shown between church attendance and loneliness and the previous research show the possible use of this relationship in the treatment of older adults suffering from loneliness. Croezen et al. (2015) propose to encourage older adults to maintain their

affiliations with religious communities and to facilitate the means to attend church service. However, given the religious sample population, it should be noted that these findings cannot be generalized to the entire population and no conclusions across a time span could be made.

Furthermore, even though the Negative Emotional Dampening Scale had a poor internal consistency, there are other conclusions that are possible. Seeing as there is a lack of research regarding this phenomenon, the findings could also point to the possibility that the construct emotional dampening doesn't truly exist or doesn't have a great amount of influence on psychological well-being. Therefore, it's important that a better measuring instrument is developed in future research.

4.4 Conclusion

All in all, the findings of this study show a relationship between several variables. Church attendance has shown to be a predictor of loneliness and the strong predictive relationship between loneliness and depressive symptoms has been found. Building on a growing body of research, these findings could be considered in the treatment of older adults. Future research should also try to identify the processes behind these association and why church attendance only seems to influence certain factors of psychological well-being.

Furthermore, the absence of influence of both preference of solitude and emotional dampening was unexpected. Although, there may have been some methodological issues in the current study, it is also plausible that there truly is no significant relation between these constructs and psychological well-being. Thus, again, further research is needed. Not only to be able to study the possible true absence of influence, but also to identify why these factor do not appear to have an influence on psychological well-being.

References

Adams, K. B., Sanders, S., & Auth, E. (2004). Loneliness and depression in independent living retirement communities: risk and resilience factors. *Aging & Mental Health*, *8*(6), 475-485. DOI:10.1080/13607860410001725054

Arslantaş, H., Adana, F., Ergin, F.A., Kayar, D., & Acar, G. (2015). Loneliness in Elderly People, Associated Factors and Its Correlation with Quality of Life: A Field Study from Western Turkey. *Iranian Journal of Public Health, 44*(1), 43-50.

Atkinson, R., & Flint, J. (2001). Accessing hidden and hard-to-reach populations: Snowball research strategies. *Social Research Update*, *33*(1), 1-4. ISSN:1360-7898

Barkan, S.E., & Greenwood, S.F. (2003). Religious attendance and subjective well-being among older Americans: Evidence from the general social survey. *Review of religious research, 45*(2), 116-129. DOI:10.2307/3512578.

Blazer, D. G. (2003). Depression in late life: review and commentary. *Journals of Gerontology Series A*, *58*(3), 249-265. DOI:10.1093/gerona/58.3.M249

Borges, L.J., Benedetti, T.R.B., Xavier, A.J., & d'Orsi, E. (2013). Associated factors of depressive symptoms in the elderly: EpiFloripa study. *Revista de Saude Publica, 47*(4), 701-710. DOI:10.1590/S0034-8910.2013047003844.

Braam, A.W., Schaap-Jonker, H., van der Horst, M.H.L., Steunenberg, B., Beekman, A.T.F., van Tilburg, W., Deeg, D.J.H. (2014). Twelve-Year History of Late-Life Depression and Subsequent Feelings to God. *American Journal of Geriatric Psychiatry, 22*(11), 1272-1281. DOI:1016/j.jagp.2013.04.016.

Broyles, P.A., & Drenovsky, C.K. (1992). Religious Attendance and the Subjective Health of the Elderly. *Review of Religious Research, 34*(2), 152-160. DOI:10.2307/3511131.

Burger, J. M. (1995). Individual differences in preference for solitude. *Journal of Research in Personality*, *29*(1), 85-108. DOI:10.1006/jrpe.1995.1005

Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, *54*(3), 165-181. DOI:10.1037/0003-066X.54.3.165

Carstensen, L. L., Pasupathi, M., Mayr, U., & Nesselroade, J. R. (2000). Emotional experience in everyday life across the adult life span. *Journal of Personality and Social Psychology*, *79*(4), 644-655. DOI:10.1037//0022-3514.79.4.644

Castro-Costa, E., Dewey, M., Stewart, R., Banerjee, S., Huppert, F., Mendonca-Lima, C., ... & Tsolaki, M. (2007). Prevalence of depressive symptoms and syndromes in later life in ten European countries. *The British Journal of Psychiatry*, *191*, 393-401. DOI:10.1192/bjp.bp.107.036772

Charles, S. T., & Carstensen, L. L. (2010). Social and emotional aging. *Annual Review of Psychology*, *61*, 383-409. DOI:10.1192/bjp.bp.107.036772

Charles, S. T., Reynolds, C. A., & Gatz, M. (2001). Age-related differences and change in positive and negative affect over 23 years. *Journal of Personality and Social Psychology*, *80*, 136-151. DOI:10.1037/0022-3514.80.1.136

Chen, Y., Hicks, A., & While, A.E. (2013). Loneliness and social support of older people in China: a systematic literature review. *Health & Social Care in the Community, 22*(2), 113-123. DOI:10.1111/hsc.12051

Conradsson, M., Rosendahl, E., Littbrand, H., Gustafson, Y., Olofsson, B., & Lövheim, H. (2013). Usefulness of the Geriatric Depression Scale 15-item version among very old people with and without cognitive impairment. *Aging & Mental Health*, *17*(5), 638-645. DOI:10.1080/13607863.2012.758231

Cohen-Mansfield, J., Hazan, H., Lerman, Y., & Shalom, V. (2015). Correlates and predictors of loneliness in older-adults: a review of quantitative results informed by qualitative insights. *International Psychogeriatrics*, 20, 1-20. DOI:10.1017/S1041610215001532

Cramer, K. M., & Lake, R. P. (1998). The Preference for Solitude Scale: Psychometric properties and factor structure. *Personality and Individual Differences*, *24*(2), 193-199. DOI:10.1016/S0191-8869(97)00167-0

Croezen, S., Avendano, M., Burdorf, A., & van Lenthe, F. J. (2013). Does social participation decrease depressive symptoms in old age?. In Börsch-Supan, A., Brandt, M., Litwin, H., & Weber, G., (Eds.), *Active Ageing and Solidarity Between Generations in*

Europe: First Results fom SHARE After the Economic Crisis (391-402). Berlin: De Gruyter.

Dahlberg, L., Andersson, L., McKee, K.J., & Lennartson, C. (2015). Predictors of loneliness among older women and men in Sweden: A national longitudinal study. *Aging & mental health, 19*(5), 409-417. DOI:10.1080/13607863.2014.944091

De Jong-Gierveld, J., & Kamphuls, F. (1985). The development of a Rasch-type loneliness scale. *Applied Psychological Measurement*, *9*, 289-299.
DOI: 10.1177/014662168500900307

De Leeuw, E. D. (2005). To mix or not to mix data collection modes in surveys. *Journal of Official Statistics*, *21*(2), 233-255. ISSN:2001-7367

Ellison, C. G., & Levin, J. S. (1998). The religion–health connection: Evidence, theory, and future directions. Health Education and Behavior, 25, 700–720.

Frazier, C., Mintz, L.B., & Mobley, M. (2005). A multidimensional look at religious involvement and psychological well-being among urban elderly African Americans. *Journal of Counseling Psychology, 52*(4), 583-590. DOI:10.1037/0022-0167.52.4.583

Friedman, B., Heisel, M. J., & Delavan, R. L. (2005). Psychometric properties of the 15-item geriatric depression scale in functionally impaired, cognitively intact, community-dwelling elderly primary care patients. *Journal of the American Geriatrics Society*, *53*(9), 1570-1576. DOI:10.1111/j.1532-5415.2005.53461.x

Fry, P. S. and Debats, D. L. (2002). Self-efficacy beliefs as predictors of loneliness and psychological distress in older adults. *The International Journal of Aging and Human Development*, 55, 233–269.

George, L. K. (2011). Social Factors, Depression, and Aging. In Binstock, R. H., George, L.K., Cutler, S. J., Hendricks, J., & Schulz, J. H. (Red.). *Handbook of Aging and the Social Sciences*. (pp. 149-162). San Diego: Academic Press. ISBN:978-0-12-380880-6

Gift, A. G. (1989). Visual analogue scales: measurement of subjective phenomena. *Nursing Research*, *38*, 286-287. URL: http://journals.lww.com/nursingresearchonline/Citation/ 1989/09000/Visual_Analogue_Scales__Measurement_of_Subjective.6.aspx

Gonnerman, M.E., Lutz, G.M., Yehieli, M., & Meisinger, B.K. (2008). Religion and health connection: A study of African American, protestant Christians. *Journal of Health Care for the Poor and Underserved, 19*(1), 193-199. DOI:10.1353/hpu.2008.0020

Gross, J. J., Carstensen, L. L., Pasupathi, M., Tsai, J., Skorpen, C. G., & Hsu, A. Y. (1997).Emotion and aging: Experience, expression, and control. *Psychology and Aging, 12*(4), 590-599. DOI:10.1037/ 0882-7974.12.4.590

Hayward, R.D., Owen, A.D., Koenig, H.G., Steffens, D.C., & Payne, M.E. (2012a) Longitudinal Relationships of Religion with Posttreatment Depression Severity in Older Psychiatric Patients: Evidence of Direct and Indirect Effects. *Depression Research and Treatment, 2012*, 1-8. DOI:10.1155/2012/745970

Hayward, R.D., Owen, A.D., Koenig, H.G., Steffens, D.C., & Payne, M.E. (2012b). Religion and the Presence and Severity of Depression in Older Adults. *American Journal of Geriatric Psychiatry, 20*(2), 188-192. DOI:10.1097/JGP.0b013e31822ccd51

Hazer, O., & Boylu, A.A. (2010). The examination of the factors affecting the feeling of loneliness of the elderly. *Elsevier, 9,* 2083-2089. DOI:10.1016/j.sbspro.2010.12.450

Heikkinen, R. L., & Kauppinen, M. (2004). Depressive symptoms in late life: a 10-year follow-up. *Archives of Gerontology and Geriatrics*, *38*(3), 239-250. DOI:10.1016/j.archger.2003.10.004

Holvast, F., Burger, H., de Waal, M. M., van Marwijk, H. W., Comijs, H. C., & Verhaak, P.F. (2015). Loneliness is associated with poor prognosis in late-life depression: Longitudinal analysis of the Netherlands study of depression in older persons. *Journal of Affective Disorders*, *185*, 1-7. DOI:10.1016/j.jad.2015.06.036

Idler, E.L., McLaughlin, J., & Kasl, S. (2009). Religion and the Quality of Life in the Last Year of Life. *Journals of Gerontology Series B-Psychological Sciences and Social Sciences, 64*(4), 528-537. DOI:10.1093/geronb/gbp028

Johnson, T.R. (1995). The Significance of Religion for Aging Well. *American Behavioral Scientist, 39*, 186-208.

Johnson, D.P., & Mullins, L.C. (1989). Subjective and Social Dimensions of Religiosity and Loneliness among the Well Elderly. *Review of Religious Research, 31*(1), 3-15. DOI:10.2307/3511019

Kato, K., Zweig, R., Schechter, C.B., Barzilai, N., & Atzmon, G. (2015) Positive attitude toward life, emotional expression, self-rated health, and depressive symptoms among centenarians and near-centenarians. *Aging & Mental Health,* 1-11 . DOI:10.1080/13607863.2015.1056770

Kessler, E. M., & Staudinger, U. M. (2009). Affective experience in adulthood and old age: The role of affective arousal and perceived affect regulation. *Psychology and Aging*, *24*(2), 349-362. DOI:10.1037/a0015352

Koenig, H.G. (2007). Religion and depression in older medical inpatients. *American Journal of Geriatric Psychiatry, 15*(4), 282-291. DOI:10.1097/01.JGP.0000246875.93674.0c

Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). Handbook of religion and health. New York:Oxford University Press.

Larson, R.W. (1990). The Solitary Side of Life – An Examination of the Time People Spend Alone from Childhood to Old-Age. *Developmental review, 10*(2), 155-183. DOI:10.1016/0273-2297(90)0008-R

Leondari, A., & Gialamas, V. (2009). Religiosity and psychological well-being. *International Journal of Psychology, 44*(4), 241-248. DOI:10.1080/00207590701700529

Levin, J.S. (1997). Religious Research in Gerontology, 1980-1994: A Systematic Review. *Journal of Religious Gerontology, (10),* 3-31.

Löckenhoff, C.E., & Carstensen, L.L. (2004). Socioemotional selectivity theory, aging, and health: The increasingly delicate balance between regulating emotions and making tough choices. *Journal of personality, 72*(6), 1395-1424. DOI:10.111/j.1467-6494.2004.00301.x

Long, C. R., & Averill, J. R. (2003). Solitude: An exploration of benefits of being alone. *Journal for the Theory of Social Behaviour*, *33*, 21-44. DOI:10.1111/1468-5914.00204/pdf

Luo, Y., Hawkley, L. C., Waite, L. J. and Cacioppo, J. T. (2012). Loneliness, health, and mortality in old age: a national longitudinal study. *Social Science & Medicine*, 74, 907–914.

McAdams, K. K., Lucas, R. E., & Donnellan, M. B. (2012). The role of domain satisfaction in explaining the paradoxical association between life satisfaction and age. *Social Indicators Research*, *109*(2), 295-303. DOI:10.1007/s11205-011-9903-9

Mhaolain, A.M.N., Gallagher, D., Connel, H.O., Chin, A.V., Bruce, I., Hamilton, F., … Lawlor, B.A. (2012). Subjective well-being amongst community-dwelling elders: what determines satisfaction with life? Findings from the Dublin Healthy Aging Study. *International Psychogeriatrics, 24*(2), 316-323. DOI:10.1017/S1041610211001360

Mookherjee, H.N. (1998a). Perception of happiness among elderly persons in metropolitan USA. *Perceptual and Motor Skills, 87*(3), 787-793.

Mookherjee, H.N. (1998b). Perception of well-being among the older metropolitan and nonmetropolitan populations in the United States. *Journal of Social Psychology, 138*(1), 72-82.

Nelson, C.J., Rosenfeld, B., Breitbart, W., & Galietta, M. (2002). Spirituality, religion, and depression in the terminally ill. *Psychosomatics, 43*(3), 213-220. DOI:10.1176/appi.psy.43.3.213

Peerenboom, L., Collard, R. M., Naarding, P., & Comijs, H. C. (2015). The association between depression and emotional and social loneliness in older persons and the influence of social support, cognitive functioning and personality: A cross-sectional study. *Journal of Affective Disorders*, *182*, 26-31. DOI:10.1016/j.jad.2015.04.033

Pinquart, M., & Sörensen, S. (2001). Influences on loneliness in older adults: A meta-analysis. *Basic and Applied Social Psychology*, *23*(4), 245-266. DOI:10.1207/S15324834BASP2304_2

Prince, M.J., Harwood, R.H., Blizard, R.A., Thomas, A., & Mann, A.H. (1997). Social support deficits, loneliness and life events as risk factors for depression in old age. The Gospel Oak Object VI. *Psychological Medicine, 27*(2), 323-332. DOI:10.1017/S0033291796004485

Roh, H.W., Hong, C.H., Lee, Y., Oh, B.H., Lee, K.S., Chang, K.J., … Son, S.J. (2015). Participation in Physical, Social, and Religious Activity and Risk of Depression in the Elderly: A Community-Based Three-Year Longitudinal Study in Korea. *Plos One, 10*(7). DOI:10.1371/journal.pone.0123838

Rokach, A., Orzeck, T., & Neto, F. (2004). Coping with loneliness in old age: a cross-cultural comparison. *Current Psychology*, *23*, 124-137. doi:10.1007/BF02903073

Rote, S., Hill, T.D., & Ellison, C.G. (2012). Religious Attendance and Loneliness in Later Life. *Gerontologist, 53*(1), 39-50. DOI:10.1093/geront/gns063

Rushing, N.C., Corsentino, E., Hames, J.L., Sachs-Ericsson, N., & Steffens, D.C. (2013). The relationship of religious involvement indicators and social support to current and past suicidality among depressed older adults. *Aging & Mental Health, 17*(3), 366-374. DOI:10.1080/13607863.2012.738414

Savikko, N., Routasalo, P., Tilvis, R. S., Strandberg, T. E., & Pitkälä, K. (2005). Predictors and subjective causes of loneliness in an aged population. *Archives of Gerontology and Geriatrics, 41*, 223–233. DOI:10.1016/j.archger.2005.03.002

Shiovitz-Ezra, S., & Leitsch, S. A. (2010). The role of social relationships in predicting loneliness: The national social life, health, and aging project. *Social Work Research*, *34*, 157-167. DOI:10.1093/swr/34.3.157

Sheikh, J. I., Yesavage, J. A. (1986). Geriatric Depression Scale (GDS): Recent evidence and development of a shorter version. *In:* Brink, T.L. *(eds.). Clinical Gerontology: A Guide to Assessment and Intervention. New York: Haworth Press.*

Sinnewe, E., Kortt, M.A., & Dollery, B. (2015). Religion and Life Satisfaction: Evidence from Germany. *Social Indicators Research, 123*(3), 837-855. DOI:10.1007/s11205-014-0763-y

Smith, T.B., McCullough, M.E., & Poll, J. (2003). Religiousness and depression: Evidence for a main effect and the moderating influence of stressful life events. *Psychological Bulletin, 129*(4), 614-636. DOI:10.1037/0033-2909.129.4.614

Swinton, J. (2001). *Spirituality and mental health care: Rediscovering a "forgotten" dimension.* London: Jessica Kingley.

Tiikkainen, P., & Heikkinen, R. L. (2005). Associations between loneliness, depressive symptoms and perceived togetherness in older people. *Aging & Mental Health*, *9*(6), 526-534. DOI:10.1080/13607860500193138

Van Tilburg, T., & De Leeuw, E. (1991). Stability of scale quality under various data collection procedures: A mode comparison on the 'De Jong-Gierveld Loneliness Scale. International Journal of Public Opinion Research, 3(1), 69-85. DOI:10.1093/ijpor/3.1.69

Yesavage, J. A., Brink, T. L., Rose, T. L., Lum, O., Huang, V., Adey, M., & Leirer, V. O. (1983). Development and validation of a geriatric depression screening scale: a preliminary report. *Journal of Psychiatric Research*, *17*(1), 37-49. DOI:10.1016/0022-3956(82)90033-4

Appendix

    I.   Interview scheme

Proefpersoonnummer:	

Allereerst wil ik u heel hartelijk bedanken dat u mee wilt werken aan ons onderzoek naar ouderen en welzijn. Zoals u misschien al weet bestaat het onderzoek uit een aantal vragen, welke ik in de vorm van een interview aan u ga stellen. Het interview zal ongeveer een uurtje duren. Voordat we beginnen, wil ik u vragen om een toestemmingsverklaring in te vullen. In dit formulier geeft u aan dat u op de hoogte bent van uw recht om het onderzoek ten allen tijde vroegtijdig te beëindigen, en dat wij de plicht hebben om uw gegevens geheel anoniem te verwerken. U mag tussendoor gerust vragen om een pauze, dat is echt helemaal geen probleem. Heeft u vooraf nog vragen, voordat we gaan beginnen?

Grijze vragen niet stellen, maar zelf invullen.

De vragenlijsten op pagina's 3 en 4 kunnen de participanten eventueel zelf invullen.

Geslacht:	Man		Vrouw	
Woonsetting:	Thuis	Verzorgingshuis	Verpleeghuis	Anders, namelijk:

Vraag				
1. Heeft u kinderen en hoeveel? Leven zij nog?				
2. Heeft u kleinkinderen en hoeveel?				
3. Heeft u broers of zussen en hoeveel? Leven zij nog?				
4. Bent u getrouwd?				
5a. Leeft uw partner nog?				
5b. Hoelang geleden is hij of zij overleden?				
6. Woont u alleen of met andere mensen? Met wie?				
7. Wat is uw hoogst genoten opleiding?				
8. Wat is de hoogst genoten opleiding van uw partner?				
9. Wat was uw beroep?				
10. Wat was het beroep van uw partner?				
11a. Waaruit bestaat uw maandinkomen?	AOW	Aanvullend pensioen (of individuele pensioensregelingen)	Inkomen uit vermogen (rente, aandelen, e.d.)	Sociale toeslagen (zorg- en huurtoeslag, e.d.)
11b. Sociaaleconomische status:	Laag (alleen AOW of er is sprake van sociale toeslagen)		Middel (er is sprake van aanvullend pensioen)	Hoog (er is sprake van inkomen uit vermogen)
12. Wat is uw geboortedatum?				
13. Wat is uw nationaliteit?				
14a. Heeft u een godsdienst of levensovertuiging? Welke?				

14b. Hoe vaak bezoekt u een bijeenkomst of dienst?	N.V.T	Meer dan 1 keer per week	1 keer per week	2 keer per maand	1 keer per maand	Minder dan 1 keer per maand

Aanvullende informatie:

Als u uw gevoelens van nu vergelijkt met die van vroeger, heeft u dan het idee dat deze afgevlakt zijn of zijn er evenveel pieken en dalen als vroeger?	Meer pieken en dalen	Geen verschil	Minder grote pieken en dalen	Geen pieken en dalen meer
	0	1	2	3

Ik beschrijf zo meteen 12 dagelijkse situaties en dan mag u aangeven hoe u zich in deze situatie voelt. Vervolgens mag u aangeven hoe u zich vroeger zou voelen in deze situaties. U geeft dit aan door een streepje te zetten op een lijn, waarbij de linkerkant van de lijn staat voor een zeer negatief gevoel en de rechterkant staat voor een zeer positief gevoel.

Bijvoorbeeld. 'Ik krijg een snoepje', daar word ik nu een beetje blij van, dus ik zet een streepje op ongeveer de helft van de lijn. Als kleuter zou ik daar echter heel erg blij van worden van een snoepje en dus zet ik een streepje helemaal rechts van de lijn. Snapt u hoe dit werkt? We willen echter niet vergelijken met de situaties in de kindertijd, maar we willen kijken naar hoe u zich zou hebben gevoeld bij de situatie rond uw 40^e levensjaar.

Laat de participant zijn antwoord geven op het losse invulformulier. Vertaal de streepjes op de schaal naar een getal tussen de 0 en 100. Verschilscore = Score van vroeger - score van nu

	Nu		Vroeger		Verschil score
1. Ik krijg een (leuk) cadeautje					
2. Iemand zegt iets aardigs					
3. Er wordt een (grappige) grap gemaakt					
4. Er komt aangenaam bezoek					
5. Ik kijk mijn favoriete tv-programma					
6. Het is mooi weer					
7. Ik zie iets vervelends op het journaal	100 -	=	100 -	=	
8. Ik laat een pot appelmoes kapot vallen	100 -	=	100 -	=	
9. Iemand zegt iets onaardigs over mij	100 -	=	100 -	=	
10. Het is slecht weer en ik moet naar buiten	100 -	=	100 -	=	
11. Ik moet lang wachten	100 -	=	100 -	=	
12. Iemand laat mij niet uitpraten	100 -	=	100 -	=	
Totaalscore:					

Er volgen nu enkele uitspraken. Deze uitspraken zijn opgetekend uit de mond van een groot aantal mensen met wie eerder uitgebreid over hun situatie is gesproken. Wilt u van elk van de volgende uitspraken aangeven in hoeverre die op u, zoals u de laatste tijd bent, van toepassing is? Zet een kruisje bij het antwoord dat op u van toepassing is.

	Ja	Min of meer	Nee
1. Er is altijd wel iemand in mijn omgeving bij wie ik met mijn dagelijkse probleempjes terecht kan			
2. Ik mis een echt goede vriend of vriendin			
3. Ik ervaar een leegte om mij heen			

	Ja	Nee	
4. Er zijn genoeg mensen op wie ik in geval van narigheid kan terugvallen			░░
5. Ik mis gezelligheid om mij heen	░░		
6. Ik vind mijn kring van kennissen te beperkt	░░		
7. Ik heb veel mensen op wie ik volledig kan vertrouwen			░░
8. Er zijn voldoende mensen met wie ik mij nauw verbonden voel			░░
9. Ik mis mensen om me heen	░░		
10. Vaak voel ik me in de steek gelaten	░░		
11. Wanneer ik daar behoefte aan heb, kan ik altijd bij mijn vrienden terecht			░░
Totaalscore:			

Dit gedeelte van het interview bevat vragen waarop u met ja of nee kunt antwoorden. U geeft het antwoord dat het beste weergeeft hoe u zich de afgelopen week, met vandaag erbij, heeft gevoeld. Bij het door u gekozen antwoord zet u een kruisje.

	Ja	Nee
1. Bent u innerlijk tevreden met uw leven?		░░
2. Bent u met veel activiteiten en interesses opgehouden (gestopt)?	░░	
3. Hebt u vaak het gevoel dat uw leven leeg is?	░░	
4. Verveelt u zich vaak?	░░	
5. Hebt u meestal een goed humeur?		░░
6. Bent u wel eens bang dat u iets naars zal overkomen?	░░	
7. Voelt u zich meestal wel gelukkig?		░░
8. Voelt u zich vaak hopeloos?	░░	
9. Blijft u liever thuis dan uit te gaan en nieuwe dingen te doen?	░░	
10. Hebt u het gevoel dat u meer moeite heeft met het geheugen?	░░	
11. Vindt u het fijn om te leven?		░░
12. Voelt u zich nogal waardeloos op het ogenblik?	░░	
13. Voelt u zich energiek?		░░
14. Hebt u het gevoel dat uw situatie hopeloos is?	░░	
15. Denkt u dat de meeste mensen het beter hebben dan u?	░░	
Totaalscore:		

Het volgende gedeelte bestaat steeds uit twee uitspraken. Het is de bedoeling dat u de uitspraak kiest die het beste omschrijft hoe u bent. In sommige gevallen passen geen van beide uitspraken bij u of vindt u beide uitspraken juist wel bij u passen, kies dan voor de uitspraak die het meest op u van toepassing is. Zet een kruisje onder het antwoord dat het beste bij u past.

1. Ik vind het fijn om onder de mensen te zijn.	Ik vind het fijn om alleen te zijn.
	░░
2. Ik zorg er altijd voor dat ik wat tijd voor mijzelf heb op een dag.	Ik zorg er altijd voor dat ik wat tijd doorbreng met andere mensen op een dag.
░░	

3. Een belangrijk aspect bij het kiezen van een hobby, vind ik contact met interessante mensen.	Een belangrijk aspect bij het kiezen van een hobby, vind ik dat ik alleen kan zijn.
4. Nadat ik een aantal uren heb doorgebracht met andere mensen, voel ik mij gestimuleerd en energiek.	Nadat ik een aantal uren heb doorgebracht met andere mensen, heb ik meestal de behoefte om alleen te zijn.
5. Als ik alleen ben, besteed ik mijn tijd vaak productief.	Als ik alleen ben, verspil ik vaak mijn tijd.
6. Ik voel vaak de behoefte om er alleen op uit te gaan.	Ik voel zelden de behoefte om er alleen op uit te gaan.
7. Ik hou van vakanties op plaatsen waar veel mensen zijn en waar veel te beleven is.	Ik hou van vakanties op plaatsen waar weinig mensen zijn en waar sereniteit en rust is.
8. Wanneer ik uren alleen moet zijn, vind ik dat saai en onaangenaam.	Wanneer ik uren alleen moet zijn, vind ik dat productief en aangenaam.
9. Als ik meerdere uren in een vliegtuig zou moeten zitten, zou ik graag naast iemand zitten waar ik een aangenaam gesprek mee kan voeren.	Als ik meerdere uren in een vliegtuig zou moeten zitten, zou ik deze tijd graag in stilte door willen brengen.
10. Tijd doorbrengen met andere mensen is vaak saai en oninteressant.	Tijd alleen doorbrengen is vaak saai en oninteressant.
11. Ik heb een sterke behoefte om andere mensen om mij heen te hebben.	Ik heb geen sterke behoefte om andere mensen om mij heen te hebben.
12. Er zijn vaak momenten dat ik graag alleen ben.	Er zijn zelden momenten dat ik graag alleen ben.
Totaalscore:	
Ik wil u vragen om een rapportcijfer aan uw lichamelijke gezondheid te geven. Hoe tevreden bent u met uw gezondheid op een schaal van 1 tot 10?	
Tot slot wil ik u vragen hoe tevreden u in het algemeen met uw leven bent. Welk rapportcijfer zou u aan het leven geven?	

Lantaarnpaalaantekeningen:

II. Emotional Dampening Scale

Voorbeeld: Ik krijg een snoepje
Nu: ☹ ———————————————————————— ☺
Vroeger: ☹ ———————————————————————— ☺

1. Ik krijg een cadeautje
Nu: ☹ ———————————————————————— ☺
Vroeger: ☹ ———————————————————————— ☺

2. Iemand zegt iets aardigs
Nu: ☹ ———————————————————————— ☺
Vroeger: ☹ ———————————————————————— ☺

3. Er wordt een grap gemaakt
Nu: ☹ ———————————————————————— ☺
Vroeger: ☹ ———————————————————————— ☺

4. Er komt aangenaam bezoek
Nu: ☹ ———————————————————————— ☺
Vroeger: ☹ ———————————————————————— ☺

5. Ik kijk mijn favoriete tv-programma
Nu: ☹ ———————————————————————— ☺
Vroeger: ☹ ———————————————————————— ☺

6. Het is mooi weer

Nu: ☹ ———————————————————— ☺

Vroeger: ☹ ———————————————————— ☺

7. Ik zie iets vervelends op het journaal

Nu: ☹ ———————————————————— ☺

Vroeger: ☹ ———————————————————— ☺

8. Ik laat een pot appelmoes kapot vallen

Nu: ☹ ———————————————————— ☺

Vroeger: ☹ ———————————————————— ☺

9. Iemand zegt iets onaardigs over mij

Nu: ☹ ———————————————————— ☺

Vroeger: ☹ ———————————————————— ☺

10. Het is slecht weer en ik moet naar buiten

Nu: ☹ ———————————————————— ☺

Vroeger: ☹ ———————————————————— ☺

11. Ik moet lang wachten

Nu: ☹ ———————————————————— ☺

Vroeger: ☹ ———————————————————— ☺

12. Iemand laat mij niet uitpraten

Nu: ☹ ———————————————————— ☺

Vroeger: ☹ ———————————————————— ☺

III. SPSS Syntax

```
RELIABILITY
 /VARIABLES=V19_1 V19_2 V19_3 V19_4 V19_5 V19_6
 /SCALE('Positieve emotionele demping') ALL
 /MODEL=ALPHA
 /STATISTICS=DESCRIPTIVE SCALE CORR
 /SUMMARY=TOTAL.


RELIABILITY
 /VARIABLES=V19_7 V19_8 V19_9 V19_10 V19_11 V19_12
 /SCALE('Negatieve emotionele demping') ALL
 /MODEL=ALPHA
 /STATISTICS=DESCRIPTIVE SCALE CORR
 /SUMMARY=TOTAL.


RELIABILITY
 /VARIABLES=V21_1 V21_2 V21_3 V21_4 V21_5 V21_6 V21_7 V21_8 V21_9 V21_10 V21_11
V21_12 V21_13
  V21_14 V21_15
 /SCALE('GDS-15') ALL
 /MODEL=ALPHA
 /STATISTICS=DESCRIPTIVE SCALE CORR
 /SUMMARY=TOTAL.


RELIABILITY
 /VARIABLES=V22_1 V22_2 V22_3 V22_4 V22_5 V22_6 V22_7 V22_8 V22_9 V22_10 V22_11
V22_12
 /SCALE('PSS') ALL
 /MODEL=ALPHA
 /STATISTICS=DESCRIPTIVE SCALE CORR
 /SUMMARY=TOTAL.
```

RELIABILITY
 /VARIABLES=V20_1 V20_2 V20_3 V20_4 V20_5 V20_6 V20_7 V20_8 V20_9 V20_10 V20_11
 /SCALE('loneliness') ALL
 /MODEL=ALPHA
 /STATISTICS=CORR
 /SUMMARY=TOTAL.

EXAMINE VARIABLES=V18 V19_1 V19_2 V19_3 V19_4 V19_5 V19_6 V19_7 V19_8 V19_9
V19_10 V19_11 V19_12
   V19_verschil V20_1 V20_2 V20_3 V20_4 V20_5 V20_6 V20_7 V20_8 V20_9 V20_10 V20_11
V20_totaal V21_1
   V21_2 V21_3 V21_4 V21_5 V21_6 V21_7 V21_8 V21_9 V21_10 V21_11 V21_12 V21_13
V21_14 V21_15
   V21_totaal V22_1 V22_2 V22_3 V22_4 V22_5 V22_6 V22_7 V22_8 V22_9 V22_10 V22_11
V22_12 V22_totaal
   V23 V24 EmoEenz SocEenz PosEmDemp NegEmDemp
 /PLOT NPPLOT
 /STATISTICS DESCRIPTIVES
 /CINTERVAL 95
 /MISSING LISTWISE
 /NOTOTAL.

EXAMINE VARIABLES=V18 V19_verschil V20_totaal V21_totaal V22_totaal V23 V24 EmoEenz
SocEenz
   PosEmDemp NegEmDemp
 /PLOT HISTOGRAM
 /STATISTICS DESCRIPTIVES
 /CINTERVAL 95
 /MISSING LISTWISE
 /NOTOTAL.

CORRELATIONS
 /VARIABLES=V18 V19_verschil PosEmDemp NegEmDemp
 /PRINT=TWOTAIL NOSIG
 /MISSING=PAIRWISE.

CORRELATIONS

  /VARIABLES=V1 V2_a MS V17 V18 V19_verschil V20_totaal V21_totaal V22_totaal V23 V24
EmoEenz

   SocEenz PosEmDemp NegEmDemp

  /PRINT=TWOTAIL NOSIG

  /MISSING=PAIRWISE.

NONPAR CORR

  /VARIABLES=V1 V2_a MS V17 V18 V19_verschil V20_totaal V21_totaal V22_totaal V23 V24
EmoEenz

   SocEenz PosEmDemp NegEmDemp

  /PRINT=SPEARMAN TWOTAIL NOSIG

  /MISSING=PAIRWISE.

REGRESSION

  /DESCRIPTIVES MEAN STDDEV CORR SIG N

  /MISSING LISTWISE

  /STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE ZPP

  /CRITERIA=PIN(.05) POUT(.10)

  /NOORIGIN

  /DEPENDENT Loneliness

  /METHOD=ENTER Sexe Age LivingArr MS Education SES SRH Religion

  /METHOD=ENTER Religous_Part

  /METHOD=ENTER NegEmDemp Solitude

  /PARTIALPLOT ALL

  /SCATTERPLOT=(*ZRESID ,*ZPRED)

  /RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)

  /CASEWISE PLOT(ZRESID) OUTLIERS(2)

  /SAVE PRED ZPRED ADJPRED MAHAL COOK LEVER ZRESID DRESID SDRESID SDBETA
SDFIT COVRATIO.

REGRESSION

  /DESCRIPTIVES MEAN STDDEV CORR SIG N

  /MISSING LISTWISE

  /STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE ZPP

  /CRITERIA=PIN(.05) POUT(.10)

  /NOORIGIN

/DEPENDENT Depression

/METHOD=ENTER Sexe Age LivingArr MS Education SES SRH Religion

/METHOD=ENTER Religous_Part

/METHOD=ENTER NegEmDemp Solitude Loneliness

/PARTIALPLOT ALL

/SCATTERPLOT=(*ZRESID ,*ZPRED)

/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)

/CASEWISE PLOT(ZRESID) OUTLIERS(2)

/SAVE PRED ZPRED ADJPRED MAHAL COOK LEVER ZRESID DRESID SDRESID SDBETA

SDFIT COVRATIO.

REGRESSION

/DESCRIPTIVES MEAN STDDEV CORR SIG N

/MISSING LISTWISE

/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE ZPP

/CRITERIA=PIN(.05) POUT(.10)

/NOORIGIN

/DEPENDENT Life_Satisfaction

/METHOD=ENTER Sexe Age LivingArr MS Education SES SRH Religion

/METHOD=ENTER Religous_Part

/METHOD=ENTER NegEmDemp Solitude Loneliness Depression

/PARTIALPLOT ALL

/SCATTERPLOT=(*ZRESID ,*ZPRED)

/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)

/CASEWISE PLOT(ZRESID) OUTLIERS(2)

/SAVE PRED ZPRED ADJPRED MAHAL COOK LEVER ZRESID DRESID SDRESID SDBETA

SDFIT COVRATIO.