



**Utrecht University**

**Master thesis**

Unraveling the Relationship between Gender, Loneliness, Emotional  
dampening, Life satisfaction, and Depressive symptomatology in Dutch Older  
Adults

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## Abstract

The current study examined the relationship between gender, (social and emotional) loneliness, emotional dampening, life satisfaction and depressive symptomatology in Dutch adults aged 70 and over ( $N = 170$ ). Beforehand, it was hypothesized that social loneliness would be more apparent in women than in men. Furthermore, emotional loneliness, emotional dampening, and preference for solitude would be more prevalent in men than in women. Also, the association between gender and depressive symptomatology would be partially mediated by emotional dampening, preference for solitude, and loneliness, and the association between gender and life satisfaction would be fully mediated by preference for solitude and loneliness. An independent  $t$  test and mediation analyses were used to assess these hypotheses. The results show no relationship between gender, social and emotional loneliness (respectively  $p = .140$ ,  $p = .149$ ), emotional dampening ( $p = .154$ ), and preference for solitude ( $p = .660$ ). Furthermore, the association between gender and depressive symptomatology was not partially mediated by emotional dampening ( $b = -.10$ , BCa CI [-0.344, 0.01]), preference for solitude ( $b = .01$ , BCa CI [-0.030, 0.128]), and loneliness ( $b = .29$ , BCa CI [-0.016, 0.693]). Also, the association between gender and life satisfaction was not mediated by preference for solitude ( $b = -.00$ , BCa CI [-0.015, 0.036]) and loneliness ( $b = -.11$ , BCa CI [-0.257, 0.002]). Future research should examine whether these results are incidental findings, or that gender differences in loneliness, emotional dampening, preference for solitude, depressive symptomatology, and life satisfaction in older adults are not as prevalent as it is thought.

## Preface

This thesis was conducted in partial fulfillment of the requirements of a Master's Degree in Clinical and Health Psychology at Utrecht University. The research started in October 2015, and was submitted in February 2016. The choice of the subject-matter was based on my in-dept affinity with elderly, which originates from my work in elderly care, and my voluntary work in a nursing home.

During the study, I've met a plethora of people aged 70 and over, all unique in their own way. Some interviews lasted only ten minutes, while others took over three hours. During these interviews, I've witnessed and shared all kinds of emotions. I've felt the anger of a woman who dropped a jar of –very sticky- marmalade over 40 years ago, and the profound grief of someone who recently lost her daughter-in-law to suicide. I also saw lots of excitement and joy, especially when looking at family portraits. Besides emotional experiences, some enriching situations occurred during the interviews. I've debated with a former farmer about the conditions in pig farms, and brainstormed with a former teacher over a plan to improve elderly care in the Netherlands. Overall, I can truly say that conducting this research has taught me a lot. Not only has it helped me gain insight in the variables of the study, it also helped developing my academic and research skills, and broadened my affinity with elderly.

First of all, I wish to express my gratitude to all participants in the study, who made it possible to conduct this study. Second, I would like to thank Anneke Vedder and her colleague dr. Henk Schut, for their supervision, inspiration, and feedback on our ideas. I also want to thank Aafke Heude, Amber van der Staak, and Eline van Basten for the pleasant collaboration. Furthermore, I would like to thank all of the people who recruited elderly family members, neighbors, in-laws, and even customers for the study. Finally, I want to thank my grandfather, Jos Scherbeijn, for being my support, inspiration, and my favorite oldie.

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## Introduction

The prevalence of loneliness in older adults is found to be as high as 39 percent (Savikko, Routasalo, Tilvis, Strandberg, & Pitkälä, 2005). Given the stigma associated with loneliness, elderly may not admit being lonely, so rates might actually be higher than reported (Pinquart & Sörensen, 2001). These findings indicate that loneliness is a problem that a large proportion of the elderly have to cope with. Loneliness is defined as the perceived discrepancy that exists between one's desired and one's actual interpersonal relationships (Salimi, 2011; Shiovitz-Ezra & Leitsch, 2010). Loneliness is closely associated with depression (Savikko et al., 2005), a lower quality of life, and a poor prognosis in old aged (Victor, Scambler, Bond, & Bowling, 2000). Loneliness has a multidimensional nature, in which Weiss (1973) made a distinction between social loneliness and emotional loneliness. Social loneliness arises out of the absence of an engaging social network or a lack of social participation. Emotional loneliness occurs out of a loss or absence of an attachment figure such as a spouse or a close friend (Drennan et al., 2008; Salimi, 2011).

### *Gender differences in loneliness*

Overall, it is found that women tend to be more lonely than men (Beal, 2006; Cohen-Mansfield, Hazan, Lerman, & Shalom, 2015; De Jong-Gierveld, Van Tilburg, & Dykstra, 2006; Pinquart & Sörensen, 2001). There are several explanations that could account for these findings. First, women are more often widowed, because they have a longer life expectancy. This means that they endure more loss of social and intimate contacts (Beal, 2006; Pinquart & Sörensen, 2001), which heightens the level of loneliness perceived (Drennan et al., 2008; Salimi, 2011). Second, women tend to focus more on the investment and conservation of social contacts. This means that actual deficits in social contacts lead to higher levels of (social) loneliness in women than in men (Pinquart & Sörensen, 2001). A last explanation emphasizes the difference in cultural roles. In general, disclosing negative feelings is less socially accepted in men than it is in women. As a result, women are more willing than men to admit being lonely (Pinquart & Sörensen, 2001). However, a nuance has to be made; men are more likely to find their intimate attachment in marriage. Women, on the other hand, also find intimate attachment figures in other close ties. Hence, when spouses pass away, men are more likely to perceive emotional loneliness than women (Dykstra & de Jong-Gierveld, 2004; Pinquart & Sörensen, 2001).

### *The positive side of loneliness*

While much attention is given to the negative dimensions of loneliness (i.e. social and emotional loneliness), social theorists tend to neglect positive forms of loneliness, particularly the preference for solitude (Long & Averill, 2003). Preference for solitude is seen as a voluntary form of loneliness, which facilitates a greater understanding of one's self and learning to enjoy one's own company (Rokach, Orzeck, & Neto, 2004). Furthermore, this form of solitude is believed to promote creativity and individuality by allowing the opportunity for self-reflection and self-exploration (Long & Averill, 2003; Rokach et al., 2004).

A theory that connects this voluntary form of loneliness (i.e. preference for solitude) to elderly is Carstensen's Socioemotional Selectivity theory (SST). This theory assumes stage of life to predict the goals people pursue and the social contacts they seek to fulfill these goals (Carstensen, Isaacowitz, & Charles, 1999). Unlike stereotypes suggest, elderly do not dwell on the past. Rather more than other age groups, elderly focus on the here and now. This focus on the present leads them to be selective in their choices of social interactions (Carstensen et al., 1999). Hence, SST postulates that the reduction of social contact in late life is not merely a consequence of loss of attachment figures, but also a consequence of selectivity regarding social contact (Carstensen et al., 1999). This means that being alone is more a deliberate choice than it is an involuntary state. Furthermore, SST posits that not only selectivity regarding social contact changes in late life, but also the emotional experiences of elderly. By shaping the social aspect, negative emotions can be avoided and positive emotions can be increased. The focus on the present and the awareness of limited time provides elderly with a perspective that diminishes the experience of negative emotions, and augments the gratitude of positive aspects in their lives (Carstensen et al., 1999). Several empirical studies have confirmed this assumption of emotional change in elderly (Charles & Carstensen, 2010; Charles, Reynolds, & Gatz, 2001), which can be summated in the construct of (negative) emotional dampening (Gross et al., 1997).

### **Emotional dampening**

Emotional dampening is defined as the decrease in frequency and intensity of emotional experiences (Gross et al., 1997). As age increases, the emotions that are experienced become more predictable and stable (Carstensen, Pasupathi, Mayr, & Nesselraode, 2000; Charles & Carstensen, 2010). Like SST assumes, research shows that negative emotions become more infrequent over the lifespan (Charles & Carstensen, 2010; Charles et al., 2001). Older adults also specifically report less negative interactions with social contacts than younger adults do

(Birditt & Fingerman, 2003). Furthermore, elderly show a smaller increase in distress during those negative interactions (Birditt, Fingerman, & Almeida, 2005).

Charles and Carstensen (2010) enumerate three possibilities for (negative) emotional dampening among older adults in their study. A first possibility is of biological nature and states that young adults have greater level of arousal than elderly. Second, cultural expectations could play a role in emotional dampening. It may be expected that older adults are less emotional, as they are seen as more mature. This could result in the usage of dampening strategies in terms of emotional responses by older adults, whereas younger adults use strategies that amplify their emotions (Charles & Carstensen, 2010). A third possibility is supported by other studies and stresses the development of adaptation or habituation. Older adults more frequently have been exposed to emotional intense experiences. Repeated exposure to such events may habituate, and thus dampen, the emotional experiences of elderly (Blanchard-Fields, 2007; Charles & Carstensen, 2010; Magai, 2001).

#### *Gender differences in emotional dampening*

Empirical evidence shows gender differences in emotional intensity. Overall, it is found that women tend to report more positive and more negative emotions. This suggests that they might experience more intense emotions, and thus experience less emotional dampening than men (Birditt & Fingerman, 2003; Charles & Carstensen, 2010; Levenson, Carstensen, Friesen, & Ekman, 1991).

#### **Well-being**

Empirical evidence is also found regarding SST's assumptions on positive emotions. Older adulthood is related to an increase in positive emotions (Charles & Piazza, 2007) and, in contrast to earlier theories, to a more positive overall well-being (Carstensen et al., 2000; Carstensen et al., 2011; Pinquart & Sörensen, 2000). This latter is most pronounced in global measures of well-being, such as life satisfaction and depressive symptomatology (Pinquart & Sörensen, 2000). Research confirms the finding of a positive overall state of well-being among older adults, with an increased life satisfaction, and a decrease in prevalence of depression over the life span (Piazza & Charles, 2006; Mroczek & Spiro, 2003). However, the decrease in prevalence of depression in older adults contradicts multiple other studies, who found that depression is one of the most prevalent mental disorders in old age (Schwarzbach et al., 2013; Yohannes, Baldwin, & Connolly, 2003).

A large-scale European study reported that the prevalence of depression in elderly ranges from 18 percent in Denmark to 36 percent in Spain (Castro-Costa et al., 2007). Yet, only a quarter to a third of these cases meet the criteria for major depressive disorder; the remainder having a subclinical or subthreshold depression (Yohannes et al., 2003). In addition, several epidemiological studies found that as the prevalence of major depression in elderly decreases, the prevalence of depressive symptoms actually increases (Geiselman & Bauer, 2000). A subthreshold depression is defined as depressive symptomatology which does not qualify for mood disorder categories according to modern operational criteria like the Diagnostic Statistical Manual (Geiselman & Bauer, 2000). Whereas it does not meet the criteria for major depression, emerging evidence shows that subthreshold depression among older patients is associated with social dysfunction, increased mortality, and shares the same risk factors as major depression (Penninx, Deeg, Van Eijk, Beekman, & Guralnik, 2000).

A possible explanation for the high levels of subthreshold depression in older adults is the occurrence of emotional dampening. Major depression is characterized by the presence of a persistent sad, empty or irritated mood (i.e. negative emotions; American Psychiatric Association, 2013). On the other hand, several studies show that older adults perceive less negative emotions in late adulthood (Birditt & Fingerman, 2003; Charles & Carstensen, 2010; Charles et al., 2001). This discrepancy could be caused by a difference in the manifestation of depression among elderly.

### *Gender differences in well-being*

As for life-satisfaction, no gender differences were found in previous studies (Fugl-Meyer, Melin & Fugl-Meyer, 2002; Huebner, 1991). Depressive symptoms on the other hand, seem to affect almost twice as many women as men (Cole & Dendukuri, 2014; Minicuci, Maggi, Pavan, Enzi, & Crepaldi, 2002; Sadock & Sadock, 2007). However, these well-known gender differences tend to decrease in old age (Forlani et al., 2014).

### **The present study**

Like stated afore, a large proportion of older adults suffer from loneliness (Savikko et al., 2005), depression (Schwarzbach et al., 2013; Yohannes et al., 2003) and show (negative) emotional dampening (Carstensen et al., 2000; Charles & Carstensen, 2010). On the other hand, life satisfaction is found to be higher in older adults (Pinquart & Sörensen, 2000), and a large proportion of elderly seem to experience a preference for solitude more than loneliness

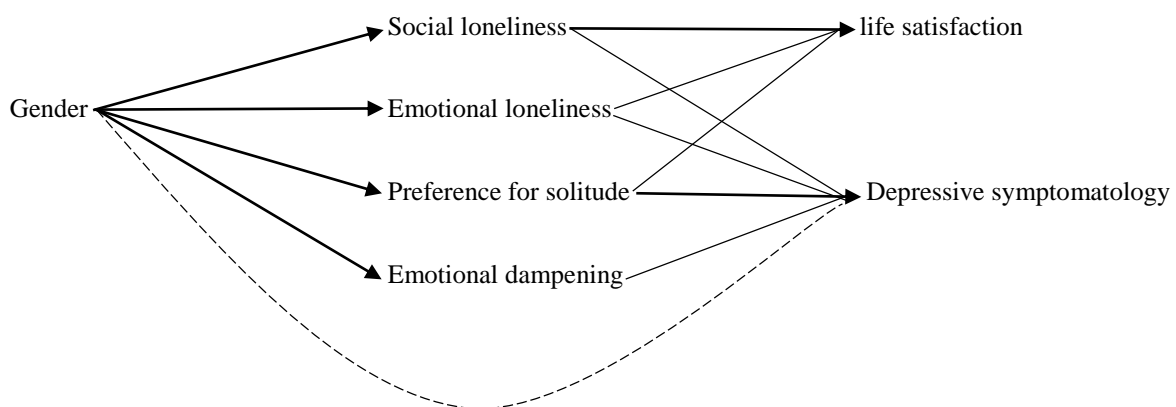


(Carstensen et al., 1999). Therefore, it is of importance to conduct research regarding these constructs.

Gender differences in (social and emotional) loneliness, depression, life satisfaction, and, to a lesser extent, emotional dampening, have been widely examined. However, to my knowledge, no study examined gender differences in preference for solitude, and these constructs haven't been studied altogether in the same study. Because these constructs seem prevalent among elderly, the current study tried to unravel the associations between gender, social and emotional loneliness, preference for solitude, emotional dampening, life satisfaction, and depressive symptomatology in adults aged 70 and over.

### *Hypotheses*

Based on the overview of literature, the following hypotheses and expectations were tested: (a) social loneliness would be more apparent in women than in men, (b) emotional loneliness would be more prevalent in men than in women, (c) men would show more emotional dampening than women, (d) as a result of the emotional dampening, preference for solitude would be more prevalent in men than in women, (e) the association between gender and depressive symptomatology would be partially mediated by emotional dampening, preference for solitude, and (social and emotional) loneliness, (f) the association between gender and life satisfaction would be fully mediated by preference for solitude and (social and emotional) loneliness. Figure 1.1. graphically shows the hypotheses.



*Figure 1.1.* Graphical display of the hypotheses of the current study. The lines represent the relationships between the variables. The dotted line represents the partially mediated relationship between gender and depressive symptomatology.

## Methods

### Sample

The sample consisted of 170 Dutch individuals aged 70 and over ( $M = 79.18$  yrs;  $SD = 5.91$  yrs), including 111 women and 59 men. The participants were recruited during October, November, and December 2015 in four regions of the Netherlands (i.e. Den Bosch, Ijsselstein, Roosendaal and Utrecht). The participants were obtained by handing out flyers in public places, and through acquaintances of the researchers. Participation to the study was voluntary. Exclusion criteria were insufficient Dutch language skills and diagnosed cognitive problems. Sociodemographic characteristics of the study sample are shown in Table 3.1.

Table 3.1.

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

Characteristic	M (SD) or n (%)
Age	79.18 (5.91)
Gender	
Women	111 (65.3%)
Men	59 (34.7%)
Living arrangement	
Independent living	126 (74.1%)
Assisted living	40 (23.5%)
Other (i.e. living in a residential group)	4 (2.4%)
Marital status	
Never married	9 (5.4%)
Married or cohabiting	81 (48.2%)
Widowed	69 (41.1%)
Divorced	9 (4.3%)
Education level	
Primary education	27 (15.8%)
Lower vocational education	86 (50.5%)
Medium vocational education	29 (17.0%)
Higher vocational education/university	28 (16.4%)
Socioeconomic status (SES)	
Low	44 (25.9%)
Medium	103 (60.6%)
High	23 (13.5%)
Self-rated general health	7.15 (1.41)
Life satisfaction	8.0 (1.03)

## Materials

**Loneliness.** Loneliness was assessed using a self-report version of the De Jong-Gierveld Loneliness Scale (De Jong-Gierveld & Kamphuis, 1985). This Dutch questionnaire contains eleven items, which can be answered on a 3-point scale. The maximum score of the questionnaire is eleven, with higher scores indicating higher levels of loneliness. The De Jong-Gierveld Loneliness Scale is divided into two subscales, based on Weiss' (1973) division of loneliness: social loneliness and emotional loneliness. An item that assessed social loneliness is: "I can call on my friends whenever I need them", and an item that addresses emotional loneliness is: "I experience a general sense of emptiness". The questionnaire is applicable at all age groups because of the lack of age-specific situations and behavior (De Jong-Gierveld & Kamphuis, 1985). Previous research by Van Tilburg and De Leeuw (1991) has shown a good validity and reliability of the De Jong-Gierveld Loneliness Scale. In the current study, an adequate internal consistency was found for the subscales Social Loneliness and Emotional Loneliness, respectively  $\alpha = .71$ , and  $\alpha = .79$ .

**Preference for solitude.** A translated version of the Burger's Preference for Solitude Scale (PSS; Burger, 1995) was administered to assess preference for solitude. The questionnaire consists of twelve pairs of statements. The participants are asked to select one of each pair of statements that described them best. For example: "Time spent alone is often productive for me." versus "Time spent alone is often wasteful for me." The PSS has a maximum score of eleven, with higher scores indicating higher levels of preference for solitude. Burger's Preference for Solitude Scale was found to have an adequate reliability in previous research (Cramer & Lake, 1998). In the current study, the PSS also had an adequate internal consistency ( $\alpha = .70$ ).

**Emotional dampening.** Since there was no suitable instrument available for assessing emotional dampening, a questionnaire was made by the researchers. Emotional dampening was assessed using multiple Visual Analogue Scales (VAS; Gift, 1989). The questionnaire was composed out of twelve daily situations; six positive situations (e.g. I get a present) and six negative situations (e.g. I drop a jar of applesauce). The participants were asked to mark their feelings in those situations by placing an 'X' on a 15-cm line anchored at 0% (i.e. extremely unhappy) and 100% (i.e. extremely happy). Each situation was assessed twice, once for the current situation, and once for the situation when the participants were aged 40. Scores were computed by subtracting the VAS-score for the current situation from the VAS-score of the past situation. Total scores could vary between -1200 and 1200, with higher scores indicating

higher levels of emotional dampening. Additionally, to assess (perceived) emotional dampening as a whole, participants were asked the following question: “If you compare your current feelings to the feelings you used to have, do you think your feelings are more flattened than before or do you perceive the same amount of ups and downs?”. In the current study, internal consistency was found questionable for the subscale Positive Emotional Dampening ( $\alpha = .63$ ), and poor for the Negative Emotional Dampening subscale ( $\alpha = .50$ ).

**Life satisfaction.** Life satisfaction was measured using a single item. The participants were asked to rate their general life satisfaction on a scale from 1 to 10.

**Depressive symptoms.** Depressive symptomatology was measured using the 15-item Geriatric Depression Scale (GDS-15; Sheikh & Yesavage, 1986), which is specifically developed to screen for depressive symptoms among older adults (Conradsson et al., 2013). The questions have a yes/no format, with questions like: “Do you want to live?”. The GDS-15 has a maximum score of fifteen, with higher scores indicating higher levels of depressive symptoms. In terms of psychometric qualities, an adequate reliability and validity of the GDS-15 has been shown (D’Ath, Katona, Mullan, Evans, & Katona, 1994; Van Marwijk et al., 1995). In the current study, the GDS-15 also had an adequate internal consistency ( $\alpha = .70$ ).

**Additional variables.** In addition, the interview included 20 questions to obtain sociodemographic information. Sociodemographic questions included age, sex, family status, living situation, marital status, nationality, income, (former) occupation, and level of education. Also, self-rated general health was assessed, as well as pet companionship and religious attendance. The format of the complete interview can be found in Appendix I.

### **Procedure**

Four interviewers contacted potential participants, asking if they were willing to participate in the study. If that was the case, an appointment was made. All interviews (with one exception) were conducted at the homes of the participants. Before the interview was conducted, the participants were provided with an informed consent, which was filled in twice. One copy was for the interviewer, the other copy belonged to the participant. The interview started with 20 short questions that addressed sociodemographic information. Subsequently, the questionnaires of respectively emotional dampening, loneliness (i.e. the De Jong-Gierveld Loneliness Scale), depression (i.e. GDS-15), and preference for solitude (i.e. Burger’s Preference for Solitude Scale) were assessed. The interview ended with two single-item questionnaires regarding self-rated general health and life satisfaction. Participants could

choose to complete the questionnaires themselves, or to answer the questions verbally. In most cases, a combination of these two methods was used. In general, the interview was conducted alone with the interviewee. In some cases, the interviewee was accompanied by a spouse or family member. Each interview lasted 60 minutes on average.

## Design

The current study used a between group/independent design.

## Statistical analyses

Power analysis indicated that a sample size of 107 participants was required to detect associations between variables ( $\alpha = .05$ ;  $1-\beta = 95\%$ ), based on effect sizes and standard deviations in previous literature. Furthermore, the preliminary analysis used Spearman correlations to explore relationships between the variables of interest. To answer hypotheses (a) to (d), an Independent samples *t* test was conducted. Hypotheses (e) and (f) were assessed by means of Mediation analyses, using the PROCESS tool of Hayes (2012). All analyses were conducted using IBM Statistical Package for Social Science (SPSS) Statistics, version 20. The syntax of the statistical analyses can be found in Appendix II.

## Results

### Preliminary analysis

First, Spearman correlations were used to explore relationships between variables of interest. A significant correlation would suggest that there is a possible association between the variables (Field, 2013). Table 3.2. shows all inter correlations of the variables of interest. It is notably that gender is not significantly correlated with any of the variables assessed.

Table 3.2. *Intercorrelations for all relevant variables.*

	1.	2.	3.	4.	5.	6.	7.
1. Gender	-						
2. Emotional dampening	-.13	-					
3. Social loneliness	.05	.04	-				
4. Emotional loneliness	.12	.08	.61**	-			
5. Preference for solitude	.03	.10	.02	-.07	-		
6. Depressive symptoms	.08	.163*	.36**	.38**	.03	-	
7. Life satisfaction	-.00	-.11	.28**	-.30**	.06	-.35**	-

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

### **Independent t test**

Second, an independent  $t$  test was used to assess gender differences in social and emotional loneliness, preference for solitude, and emotional dampening. Independence of measurement was not fully guaranteed, since some participants in the current study were couples. Because all participants participated only once in the study, and because not all participants were married, the independent  $t$  test was continued. Furthermore, the assumption of normality was assessed using histograms, Q-Q Plots, Skewness, Kurtosis, and the Kolmogorov-Smirnov Test of Normality. Not all variables were normally distributed. Therefore, the data was bootstrapped during the analysis. Additionally, homogeneity of variance was assessed by means of the Levene's test for Equality of Variance. Levene's test showed homogeneity for emotional loneliness,  $F = 1.574$ ,  $p = .211$ , preference for solitude,  $F = 1.832$ ,  $p = .178$ , and emotional dampening,  $F = 0.006$ ,  $p = .939$ . As for social loneliness, Levene's test showed that variances were not equally distributed in the sample,  $F = 6.100$ ,  $p = .015$ . Therefore, the scores of which equal variances are not assumed were used for social loneliness.

The independent  $t$  test showed no significant gender differences for social loneliness,  $t(166) = -1.48$ ,  $p = .140$ , emotional loneliness,  $t(166) = -1.45$ ,  $p = .149$ , preference for solitude,  $t(166) = -.44$ ,  $p = .660$ , and emotional dampening,  $t(166) = 1.43$ ,  $p = .154$ . This indicates that there were no differences in the level of social and emotional loneliness, preference for solitude, and emotional dampening between men and women.

The prior formulated hypotheses stated that social loneliness would be more apparent in women than in men, emotional loneliness was expected to be more prevalent in men than in women, and men were expected to show more emotional dampening and more preference for solitude than women. The results of the independent  $t$  test did not support any of these hypotheses.

### **Mediation analyses**

Third, mediation analyses were used to assess the mediated relationship between gender, depressive symptomatology, and life satisfaction. The formerly hypotheses stated that the relationship between gender and depressive symptomatology would be partially mediated by emotional dampening, preference for solitude, and (social and emotional) loneliness. The relationship between gender and life satisfaction, on the other hand, would be fully mediated by preference for solitude and (social and emotional) loneliness. Because of missing data, two

participants were excluded for these analyses. The assumption of normality was assessed using histograms, Q-Q Plots, Skewness, Kurtosis, and the Kolmogorov-Smirnov Test of Normality. All variables seemed fairly normally distributed. To correct for possible bias, the data was bootstrapped during the analyses.

### *Mediation analysis 1*

The first mediation analysis assessed whether the relationship between gender and depressive symptomatology was partially mediated by emotional dampening, preference for solitude, and loneliness. No significant effect was found for the relationship between gender and emotional dampening ( $b = -17.12, p = .15$ ), gender and preference for solitude ( $b = .19, p = .66$ ), and gender and loneliness ( $b = .57, p = .12$ ). For the relationship between the mediators and the outcome variable, emotional dampening and loneliness showed to be significantly associated with depressive symptoms ( $b = .01, p < .01$  and  $b = .51, p < .01$ , respectively). However, preference of solitude was not found to be significantly associated with depressive symptoms ( $b = .03, p = .59$ ). The direct effect of the relationship between gender and depressive symptoms was found to be non-significant ( $b = .18, p = .57$ ), nor was the indirect relationship between these two variables through emotional dampening,  $b = -.10$ , BCa CI [-0.344, 0.01], preference for solitude,  $b = .01$ , BCa CI [-0.030, 0.128], and loneliness,  $b = .29$ , BCa CI [-0.016, 0.693]. These findings are not in line with the prior formulated hypothesis.

### *Mediation analysis 2*

The second mediation analysis checked whether the relationship between gender and life satisfaction was fully mediated by preference for solitude, and loneliness. Like in the first mediation analysis, no significant relationship was found between gender and preference for solitude ( $b = .19, p = .66$ ), and gender and loneliness ( $b = .57, p = .12$ ). Furthermore, loneliness was significantly related to life satisfaction ( $b = -.18, p < .01$ ), in contrast to preference for solitude ( $b = .00, p = .89$ ). Finally, both the direct relationship between gender and life satisfaction ( $b = .15, p = .32$ ), and the indirect relationship through loneliness,  $b = -.11$ , BCa CI [-0.257, 0.002], and solitude,  $b = -.00$ , BCa CI [-0.015, 0.036], were insignificant. The insignificant direct relationship between gender and life satisfaction was predicted by the prior formulated hypothesis, the insignificant indirect relationships were not.

## **Discussion**

The current study was the first to examine the relationship between gender, social and emotional loneliness, preference for solitude, emotional dampening, life satisfaction, and depressive symptomatology in older adults, specifically together in the same study. In advance, it was expected that social loneliness would be more apparent in women, and that emotional loneliness would be more prevalent in men. Furthermore, it was expected that men would show more emotional dampening and more preference for solitude than women. Finally, two hypotheses regarding mediation were included. It was expected that the association between gender and depressive symptomatology would be partially mediated by emotional dampening, preference for solitude, and (social and emotional) loneliness, and that the association between gender and life satisfaction would be fully mediated by preference for solitude and (social and emotional) loneliness. The results, however, show no gender differences in social and emotional loneliness, preference for solitude, and emotional dampening. Additionally, emotional dampening, preference for solitude, and loneliness were not found to be mediating the relationship between gender and depressive symptomatology. Also, the results do not support the second mediation model. No relationship was found between gender and life satisfaction, as was found in previous studies (Fugl-Meyer et al., 2002; Huebner, 1991). However, preference for solitude and (social and emotional) loneliness did not function as mediators in this relationship. The results are generally not in line with previous studies, who found a relationship between gender and loneliness (Beal, 2006; Cohen-Mansfield et al., 2015; De Jong-Gierveld et al., 2006; Pinquart & Sörensen, 2001), gender and emotional dampening (Birditt & Fingerman, 2003; Charles & Carstensen, 2010; Levenson, Carstensen, Friesen, & Ekman, 1991), and gender and depression (Cole & Dendukuri, 2014; Minicuci et al., 2002; Sadock & Sadock, 2007). Although the current study was carefully designed, some limitations could have influenced the results. These limitations are mentioned below.

## **Sample**

A critical point regarding the sample was the appearance of couples, which could indicate non-independence of the observations. Non-independence of observations occurs when there is a natural link between two scores (Kashy & Snyder, 1995). In the case of couples, the natural link is the history of the relationship. Overall, couples aged 70 and over have a long history of their relationship, which indicates non-independence of observations (Kashy &



Snyder, 1995). Kenny (1995) stated that the scores of couples are likely to be correlated, and that these non-independence of the observations can bias the results.

Both snowball sampling and non-independence of the observations could have led to bias in the results. Because scores might be correlated, especially in couples, this could clarify the absence of gender differences in social and emotional loneliness, preference for solitude, emotional dampening, life satisfaction, and depressive symptomatology in the current study.

### **Heterogeneous setting**

A second important limitation of the current study is the heterogeneous setting in which the interviews took place. All interviews (with one exception), took place at the homes of the participants. However, some interviewees were accompanied by a family member or spouse, while others were interviewed alone. This could have led to a response trend with higher levels of social desirability, with results biased towards the respondents' perceptions of that is social acceptable (Fisher, 1993). Another factor that could have led to differences in social desirability, were the response options. Like stated in section 2.3., the participants could choose to complete the questionnaires themselves, or to answer the questions verbally. This could have led to different levels of social desirability, which has been found to lead to misleading research results (Fisher, 1993). In the case of the current study, social desirability could have led to an underestimation of especially loneliness and depressive symptomatology.

### **Questionnaire emotional dampening**

A third limitation of the study were the poor psychometric qualities of the questionnaire regarding emotional dampening. In the current study, the internal consistency was found questionable for the subscale Positive Emotional Dampening, and poor for the Negative Emotional Dampening subscale. The internal consistency determines to which degree the items of a questionnaire jointly measure the same construct (Henson, 2001). For the self-made questionnaire, the items of the two subscales do not seem to measure the same construct (i.e. emotional dampening). Another limitation of the questionnaire is that it involves retrospectivity. The test asks participants to think back to the time when they were 40 years old, a time which is sometimes 50 years ago. Retrospective measurements are known to have a substantial measurement error, which affects the reliability of the test (Hardt & Rutter, 2004). Because the reliability of the questionnaire regarding emotional dampening was inadequate, no conclusions can be made regarding the results on emotional dampening. This could possibly explain the lack of gender differences in emotional dampening found in the current study. An

alternative explanation for these findings is that because emotional dampening occurs in both sexes, gender differences in emotional dampening are less extant in elderly. Another possibility for the current results is that emotional dampening does not exist to the extent as it is thought. Many participants indicated that their emotional ups and downs were unaltered, supporting this explanation.

### **Clinical implications**

Despite the summed up limitations of the current study, the results could have a certain influence on the clinical setting. The absence of a relationship between gender, social and emotional loneliness, preference for solitude, emotional dampening, life satisfaction, and depressive symptomatology could signify that gender differences are overestimated in previous research, at least regarding elderly. Forlani and colleagues (2014) supports this statement by their finding that gender differences in depression tend to decrease in old age. If it is the case that gender differences in elderly are not as prevalent as it was thought, it seems rational to reduce the attention given to gender differences in research and the clinical setting, and focus more on the constructs that seem to have more influence on social and emotional loneliness, preference for solitude, emotional dampening, life satisfaction, and depressive symptomatology.

A second implication highlights the possible overestimation of emotional dampening. Like stated afore, several participants stated that their current emotional experiences were the same as when they were 40 years old. If it is the case that emotional dampening does not exist to the extent as it was thought, it seems reasonable to reduce the attention given to this construct, and focus more on constructs that are prevalent among elderly.

As for the clinical setting, the results imply that it is not necessary to develop gender-specific interventions for elderly to reduce, for example, loneliness and depression. Instead, it is sufficient to develop interventions that focus on elderly in general, instead of gender differences in this target group. For instance, interventions regarding depressive symptomatology should focus on the subthreshold symptoms of depression, which are very prevalent among elderly (Yohannes et al., 2003).

### **Future research**

Based on the limitations and the clinical implications, suggestions can be made for future research. First, it is of importance that participants are acquired using multiple methods. Although multiple methods were used to recruit participants, the vast majority of the

participants were recruited through snowball sampling. Second, couples should be considered with caution, in the sense that the correlation between both sets of answers should be monitored, and a paired-sample *t* test should be used when the correlation between those sets of answers is high. Third, to minimize the influence of a heterogeneous setting, and to obtain a stable level of social desirability, it is advised that future research is conducted either verbally or written, not both. Fourth, it is advised that the interviewee is not accompanied by someone, to reduce the influence of a heterogeneous setting and to minimize social desirability. Fifth, future research should make use of a different measurement for emotional dampening, since the self-made questionnaire of the current study has a poor reliability. Another reason to assess emotional dampening using a different measurement, is to explore the possibility that emotional dampening does not exist to the extent as it was thought. By improving these five aspects, future research can test to which extent the limitation of the current research has influenced the results, and determine whether a change of focus is recommended.

### **Conclusion**

The current study explored the relationship between gender, social and emotional loneliness, preference for solitude, emotional dampening, life satisfaction, and depressive symptomatology in adults aged 70 and over. The results show no relationship between gender and the other constructs. Future research should show whether these results are due to the limitations of the current study, or that gender differences in old aged are not as extant as it is thought.

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## Appendices

### Appendix I: The format of the complete interview

Algemeen praatje:					
Deze vragen kun je zelf invullen, zonder ze aan de persoon te stellen.					
Geslacht:	Man			Vrouw	
Woonsetting:	Thuis	Verzorgingshuis	Verpleeghuis	Anders, namelijk:	
Ik wil graag beginnen met een paar algemene vragen.					
1. Heeft u kinderen en hoeveel?					
2. Heeft u kleinkinderen en hoeveel?					
3. Heeft u broers of zussen en hoeveel? Leven zij nog?					
4. Bent u getrouwd?					
5. Leeft uw partner nog?					
6. Woont u alleen?					
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?					
11. Waaruit bestaat uw maandinkomen?	AOW	Aanvullend pensioen	Inkomen uit vermogen	Overig inkomen	Sociale uitkeringen
12. Wat is uw geboortedatum?					
13. Wat is uw nationaliteit?					

14. Heeft u een religie of levensovertuiging? Welke?	

Ik ga nu enkele uitspraken voorlezen. 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?

Indien het antwoord een wit hokje betreft, scoor met 0. Indien het antwoord een grijs hokje betreft, scoor met 1.

	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			
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:			

Ik ga u nu nogmaals een aantal vragen stellen die u met ja of nee mag beantwoorden. Het is de bedoeling dat u het antwoord geeft dat het beste weergeeft hoe u zich de afgelopen week, met vandaag erbij, heeft gevoeld.

Indien het antwoord een wit hokje betreft, scoor met 0. Indien het antwoord een grijs hokje betreft, scoor met 1.

	Ja	Nee
1. Bent u innerlijk tevreden met uw leven?		
2. Bent u met veel activiteiten en interesses opgehouden?		
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:		

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 bij de situatie rond uw 40<sup>e</sup> 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.

	Nu	Vroeger
1. Ik krijg een cadeautje		
2. Iemand zegt iets aardigs		
3. Er wordt een 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 iets 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 - =
Totaalscores:		
Verschilscore:	Vroeger - Nu =	

## Appendix II: Syntax of SPSS

```
DATASET ACTIVATE DataSet1.
CORRELATIONS
/VARIABLES=V1 EmoEenz SocEenz V22_totaal V24 NegEmDemp V21_totaal
/PRINT=TWOTAIL NOSIG
/STATISTICS DESCRIPTIVES
/MISSING=PAIRWISE.
NONPAR CORR
/VARIABLES=V1 EmoEenz SocEenz V22_totaal NegEmDemp V21_totaal
/PRINT=SPEARMAN TWOTAIL NOSIG
/MISSING=PAIRWISE.

BOOTSTRAP
/SAMPLING METHOD=SIMPLE
/VARIABLES TARGET=Emotional_Dampening Preference_for_Solitude
Emotional_Loneliness
Social_Loneliness INPUT=Geslacht
/CRITERIA CILEVEL=95 CITYPE=PERCENTILE NSAMPLES=1000
/MISSING USERMISSING=EXCLUDE.
T-TEST GROUPS=Geslacht(0 1)
/MISSING=ANALYSIS
/VARIABLES=Emotional_Dampening Preference_for_Solitude Emotional_Loneliness
Social_Loneliness
/CRITERIA=CI(.95).
```

Note: Syntax for the mediation analyses was not included since the PROCESS tool by Hayes did not support this function.