Master thesis: (Measuring) Attitudes towards Dementia

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Chapter 1 Introduction

1.1 General introduction

In this chapter an introduction will be made to the main topics of this thesis. A background picture will be given on the current trends related to dementia and dementia care, the research questions guiding this thesis will be discussed and the societal and scientific relevance of this thesis will be discussed.

Dementia is defined by the World Health Organization (WHO) (2017) as a "syndrome – usually of a chronic or progressive nature – in which there is deterioration in cognitive function (i.e. the ability to process thought) beyond what might be expected from normal ageing. It affects memory, thinking, orientation, comprehension, calculation, learning capacity, language, and judgement." It is expected that the number of people with dementia will increase to 538.000 in the Netherlands in 2040, versus around 270.000 in 2016 (Alzheimer Nederland, 2018). This is part of a global trend through which it is expected that every 20 years the number of people suffering from dementia is expected to double (Alzheimer's Disease International, 2013). These expectations are predominantly based on the assumption of continuous age- and sex- specific prevalence of dementia, through which an ageing population alone will drive this expected increase. Review studies have shown that this assumption is not ill-founded, but do note that efforts to improve public health in high-income countries bear the opportunity to eventually affect this continuous trend. It is however clear that the rising trend is unlikely to change in the coming years (Prince, Ali, Guerchet, Prina, Albanese & Wu, 2016).

The expected growing prevalence of dementia in the coming years has led to a need for countries and organizations to become more dementia friendly (Samen Dementievriendelijk, 2018). Initiatives have for example been organized to make communities more dementia-friendly (Samen Dementievriendelijk, 2018). Part of this development of becoming more dementia-friendly is a culture shift within dementia care in long-term care residences in which a new, more psychologically focused way of working is preferred above seeing dementia as a purely biomedical phenomenon (O'Connor & McFadden, 2010). McParland, Kelly & Innes (2017) describe this shift as a shift from a biomedical discourse, which focusses on a loss of function, decline and death, towards a 'living well' discourse. This 'living well' discourse is centered around supporting the remaining strength of people with dementia and recognizing their unique personhood, also described as a social-psychological model of understanding dementia (Sabat, Napolitanp & Fath, 2004). This culture shift should manifest itself by giving people with dementia a more fulfilling life, and policy developed has shifted the focus away from loss of abilities, to indeed supporting strengths of people with long term care needs (McParland, Kelly & Innes, 2017) and enabling people affected by dementia to live a meaningful and fulfilling life (World Health Organization, 2017). This shift from a biomedical point of view to a 'living well' discourse has also manifested itself in medical research on a cure for dementia, in which there is not only a focus on 'cure' but also on 'care'. No new drugs have been approved since 2003 and experimental dementia drugs have had a 99.6% failure rate (Powell, 2018).

The Dutch government is encouraging the trend towards a more holistic approach with regard to dementia and dementia care, and is stressing that people with dementia can still deliver an active contribution to their respective community when their limitations are taken into account (Rijksoverheid, 2017). People affected by dementia often lack freedom when living in care homes, in which physical and chemical constraints are often widely used (WHO, 2017). Care facilities have also expressed a wish to give their residents a more fulfilling life, and have put giving meaning to one's life and trying to make pastime as useful as possible central in their approach towards long term care.

Table 1: Park Vossenberg:

This thesis will focus on a care facility for people with dementia in Kaatsheuvel. In Kaatsheuvel a park called Park Vossenberg is being developed around care facility Maasduinen which is open for both clients and people from the surrounding area with the aim of serving three goals: connecting people from the surrounding areas to clients of the facility with the aim of making them more at ease around them, change their attitudes towards people with dementia, give clients living within the facility an open and more fulfilling life, and improving the relations between the care organization and the local community. These goals all stem from the notion that there will be an expected increase in the number of people living with dementia in the coming years, and that an effort should be made to make the lives of these people living with dementia as fulfilling as possible. Currently a research project is ongoing at Park Vossenberg to evaluate the changes around the care facility. Park Vossenberg is not yet finished. Part of this research project is to track attitude change over time of the residents of the community, this thesis is a part of that research project. Tracking the change in attitudes will however only be possible one's the park is finished

Dementia bears very negative connotations in today's society, and the popular view on dementia is still centered around the biomedical discourse as identified by McParland et al (2017). People who suffer from mental illnesses like dementia carry "undesirable personable attributes" that people want to avoid, which causes them to be stigmatized (Link, Phelan, Bresnahan, Stuve & Pescosolido, 1999; Piver, Nubukpo, Faure et al, 2013). People with mental illnesses like dementia are often viewed as unpredictable, anti-social and dangerous (Read & Harré, 2001). This in turn can lead to people regarding people with dementia as sort of other species and not as people in the full sense (Kitwood, 1997; Gilleard & Higgs, 2010) in order to reduce their own anxiety and fear of becoming someone who suffers from dementia them self. They are perceived as 'others' within society, and this stereotyping can stand in the way of them becoming included in society and leading a fulfilling life, which is a central aim of the 'living well' discourse. Herrmann, Welter, Leverenz, Lerner, Udelson, Kanetsky, Sajatovic (2017) have also found that stigma towards dementia is more prevalent among people who have limited knowledge and limited contact with people who have dementia. This thesis is focused on the goal of attitude change towards dementia which is partly underlying the creation of

Park Vossenberg around care facility Maasduinen. Attitude change can unfortunately not be measured in this thesis, since Park Vossenberg is not yet finished. In order to measure attitudes towards dementia, for this thesis a questionnaire will be developed which will be send out to residents surrounding Park Vossenberg, This questionnaire will eventually be used to measure attitude change over time.

1.2 Research questions:

This thesis aims at addressing the following research questions. The first question is focused on the questionnaire and how attitudes towards dementia can be adequately measured in the questionnaire.

How can attitudes of residents surrounding Park Vossenberg be adequately measured in the questionnaire?

The second question is focused on identifying how differences in attitudes towards dementia can be explained.

How can differences in attitudes towards dementia be explained?

The third question is a policy related question, which aims at addressing whether the policy implementation of Park Vossenberg is in line with existing literature on attitude change and public perception of dementia.

Is the policy implemented in Park Vossenberg in line with present research on attitudes towards dementia?

1.3 Societal relevance:

This research is interesting both on macro and micro level. Local municipalities have expressed a wish to become more dementia friendly (Alzheimer Nederland, 2016). The questionnaire which will be developed will be able to measure attitudes towards dementia in the community, and the explanation of variation in attitudes towards dementia which will be analyzed could provide municipalities with information as to how they can address current attitudes with regard to dementia.

On a micro level the stigma which is associated with dementia bears very negative consequences for the people suffering from this disease. People suffering from dementia are often isolated because of the stigma which is attached to dementia, or because of possible negative reactions of friends and family to the symptoms which are associated with dementia (Batsch, Mittelman, & Alzheimer's Disease International, 2012). They are also more likely to report feelings of loneliness (Fratiglioni, Wang, Ericsson, Maytan & Winbald, 2000; Moyle, Kellett, Ballantyne et al, 2011). Crisp,

Gelder, Rix, Meltzer and Rowlands (2000) found that the social distancing towards people with dementia is mainly the consequence of people perceiving them hard to talk to, feel they are different from the way they are and unpredictable. This view can be influenced by the often negative and unrealistic presentation of dementia symptoms in media and academic literature (Gerritsen, Kuin, & Nijboer, 2014). Fear of negative responses because of the stigma attached to dementia can also prevent people who experience memory loss from seeking help, which could have more negative health consequences as a consequence (Hermann et al, 2017).

Many negative health consequences are also associated with the experience of loneliness, such as increased chances of early mortality (Hawkley, Hughes, Waite, Masi, Thisted, Cacioppo, 2008), higher blood pressure and worse cognition over time (Luanaigh & Lawlor, 2008). The notion that the attitude that people have towards people with dementia affects the extent to which people that suffer from dementia experience loneliness, makes it evident that there is a need to establish an adequate way to measure the attitudes of people towards dementia, and make an effort to change the common perception on dementia. Especially in the light of recent developments in the organization of healthcare in the Netherlands this becomes evident. One of the consequences of the devolution of care to local municipalities that took place in 2015 is that there is an increased effort to stimulate people experiencing mild symptoms of dementia to stay in their home as long as possible, with support from informal care and make them part of the local community longer (Rijksoverheid, 2017; Maarse & Jeurissen, 2016). Reducing negative attitudes has also been found to be essential in order to promote positive relationships between different groups (Pittinsky, Ratcliff and Maruskin, 2008).

Reducing negative attitudes towards dementia is also expected to have an effect on the willingness of young people to pursue a career in general care and dementia care related jobs (Kinney et al, 2017), which is important because of the increasing number of elderly people.

1.4 Scientific relevance:

For this thesis a questionnaire measuring the attitudes of citizens of the area surrounding Park Vossenberg towards people with dementia will be developed, using the Dementia Attitude Scale (DAS) developed by O'Connor and McFadden (2010). The DAS has been supported for convergent validity and has an acceptable Cronbach's Alpha of (0.83-0.85) (O'Connor & McFadden, 2010). Next to the validation done by O'Connor and McFadden (2010) in the United States the DAS has so far only been translated and validated in Croatia (Coso & Mavrinac, 2016). There are only a few questionnaires that deal with attitudes toward dementia but the DAS is the only questionnaire that covers the entire construct of dementia (Coso & Mavrinac, 2016; O'Connor & McFadden, 2010). The Croatian version was also validated for the general population by means of confirming convergent validity, which will also be done in this thesis. The DAS has not yet been translated nor validated for the Dutch context. The translation and validation of the DAS is one of the two aims of this thesis.

By involving the people with dementia in Park Vossenberg the broader research that will be

conducted in Park Vossenberg which this thesis is a part of, builds on the suggestion given by Herrmann et al (2017) based on their systematic review of dementia attitude research. In which they note that there have been few evidence-based stigma reduction approaches in which a real-world intervention was involved which included people with dementia. Having an adequate measure to document attitudes towards dementia like the DAS will be important to evaluate interventions aimed at promoting positive attitudes (Pittinsky, Rosenthal and Montoya, 2011) like the one in Park Vossenberg. Documentation of positive attitudes can be particularly important when attempting to evaluate interventions to promote positive attitudes toward members of an out-group (Pittinsky et al., 2011)

The research done in Park Vossenberg will pay specific attention to the local embeddedness of Park Vossenberg. Many of the residents of the care facility have relatives living in the surrounding area. Previous research by Van Beek, Wagner, Frijters, Groenewegen and Ribbe (2013) has shown that embeddedness of nursing staff, the local community, and connections with relatives of patients lead to residents being treated with more respect and staff being more at ease around residents. It will be interesting to see if the changing relationship between the care organization and the local community will also indirectly lead to people from the local community feeling more at ease around residents, taking the local embeddedness of the care organization into account.

Furthermore, the results of the intervention in Park Vossenberg and the expected change in attitudes towards people with dementia are relevant because of the inconclusive results of the research that yet has been done on the effect of being familiar with someone that has a mental illness. Increased contact with people suffering from dementia has been shown to lead to more positive attitudes towards dementia among nursing students and caregivers (Zimmerman, Williams, Reed, Boustani, Preisser, Heck & Sloane, 2005) but these hypothesis have not yet been tested among the general population. Crisp, Gelder, Rix, Meltzer and Rowlands (2000) have found that people who know someone with a mental illness were just as likely to hold negative opinions towards mental illnesses like dementia as people who do not know someone with such a mental illness, whereas a systematic review of stigma research by Hermann et al (2017) found that limited information on dementia did indeed correspond with a higher level of stigma. Initiatives on the reduction of stigma surrounding dementia are mainly focused on informing people on dementia (Batch et al, 2012). The results of the intervention in Park Vossenberg could therefore have interesting policy implications, especially due to the attention which is given to contact, the local context and local embeddedness in this project.

1.5 Empirical Strategy:

An existing measure for attitudes towards people with dementia called the Dementia Attitude Scale (DAS) will be translated and validated for the Dutch context, plus extra questions will be added based on existing literature on attitudes towards people with dementia.

Backward-forward translation will be used for the translation of the questionnaire, since this

has shown to lead to a higher quality of the final version of the questionnaire. Cultural adaptation will also be done to ensure usability of the questionnaire outside the original setting in which the DAS was developed. This is important since health problems are expressed differently across cultures (Guillemin, Bombardier, Beaton, 1993)

Face validity will be established by asking experts in the field of dementia to look at the questionnaire to establish whether the concept of dementia is adequately measured in the questionnaire and whether the concepts used are culturally adapted properly.

Convergent validity will be established by comparing the questionnaire with another similar measure aimed at measuring attitudes towards disabilities, in this case the Approaches towards dementia Questionnaire (ADQ). This method was also applied by O'Connor and McFadden (2010) with the validation of the DAS among college students and nursing assistant students.

The final step of the validation procedure will be the analysis of the results of the questionnaire which were send out to a sample of the target population of this research. Factor analysis will be done on these results and Cronbach's alpha will be established to establish construct validity and whether the relevant concepts are all adequately measured in the questionnaire.

A preliminary test of the hypothesis related to differing attitudes towards dementia will also be included in the thesis.

1.6 Chapter overview

This thesis will consist of two parts which each contain their own chapters. The first part of this thesis is focused on the validation of the DAS. A description will be given of the methods used for the translation and validation of the scale. Expectations will be formulated with regard to the requirements for the DAS, and the results of the statistical analysis will be elaborated on. Both confirmatory and exploratory factor analysis will be conducted plus a description will be given on the correlation of the DAS and the ADQ for the establishment of convergent validity.

In the second part a theoretical framework will be elaborated on through which potential causes for differences in attitudes can be understood. The hypotheses that will be formed based on literature focused on attitudes towards dementia have led to questions that were included in the questionnaire send out to the residents of the area surrounding Park Vossenberg. Preliminary statistical testing will be executed on these hypothesis as well plus a description will be given with regard to the results of these analyses. In part 4 there will be a general discussion of the results of part 2 and 3, plus policy recommendations will be given based on the findings of this thesis.

Part 1: Validation of the Dementia Attitude Scale

2.1 Background DAS

O'Connor and McFadden (2010) developed the Dementia Attitude Scale (DAS) which aims at measuring both knowledge about dementia and people's feelings of comfort around people with dementia. During the development of the DAS O'Connor and McFadden (2010) used the definition of Breckler (1984) as a guideline for the inclusion of all relevant components of an attitude, according to the classic definition of attitudes. Breckler (1984) defines an attitude as 'a response to a person, object, or event that combines three components: emotional/affect, behavioral and cognitive'. According to this definition the emotional component relates to pleasurable to unpleasurable affect, the cognitive aspect to favorable/unfavorable cognition, and the behavioral aspect to supportive/hostile behavior (O'Connor & McFadden, 2010). The affect/emotional component manifests itself by sympathetic nervous responses and verbal statements of affect, the behavioral component by overt actions and is measured by verbal statements about behavior, and the cognitive component refers to perpetual responses and verbal statements about belief (Breckler, 1984).This model by Breckler (1984) is described as the tripartite model of attitudes (O'Connor & McFadden, 2010; Dalege et al, 2016). Breckler (1984) described that the different components of the tripartite model have different antecedents. The behavioral component can be developed through operant conditioning, the cognitive component through educational materials and the affective/emotional aspect through classical conditioning (Kim, Lu and Estrada-Hernandez, 2015). Exploratory factor analysis has shown that the questions in the DAS reflect the affective, behavioral and cognitive components as described by Breckler (1984), but also showed that there is a strong connection between people's feelings and behaviors towards dementia (O'Connor & McFadden, 2010). The DAS has been used before predominantly in research related to measure attitude change of psychology, nursing and medical students (Scerri & Scerri, 2013; George, Stuckey and Whitehead, 2014; Kimzey, Mastel-Smith and Alfred, 2016; Robers & Noble, 2015; George, Yang, Stuckey et al, 2012).

Exploratory factor analysis done during the development of the DAS showed that that the DAS has a two-factor structure: social comfort and dementia knowledge which were moderately correlated (O'Connor & McFadden, 2010; Coso & Mavrinac, 2016). The affective and behavioral components of the tripartite model related to the 'social comfort' factor of the DAS, and the cognitive component related to the 'dementia knowledge' factor. After translation and cultural adaptation of the DAS for the Dutch context and measurement in a sample of the general population the DAS will still have to relate to these two factors in order to be fit for use among the Dutch general population in its current form.

Reliability during the development of the original DAS was determined by establishing Cronbach's alpha, which was respectively ($\alpha = 0.82$) for social comfort and ($\alpha = 0.75$) for dementia knowledge. The complete DAS showed a high Cronbach's alpha during its initial development above

0.8 and ($\alpha = 0.847$) for the Croatian version of the DAS (Coso & Mavrinac, 2016). A similar Cronbach's alpha should be pursued for the Dutch version. Factor analysis of the Croatian version of the DAS identified two new factors, which were found instead of 'social comfort' and 'dementia knowledge' when validating the scale for the Croatian general population and which were not present during the initial development of the DAS by O'Connor & McFadden (2010): 'positively formulated' and 'negatively formulated'. This finding is interesting for this thesis, since these two new factors only appeared after inclusion of a sample of the general population, and not when the DAS was tested among health workers. Among the general population the two factors of O'Connor and McFadden (2010) disappeared, whereas during the validation among health workers the same factors as in the original validation study became apparent. Coso and Mavrinac (2016) noted that this could be indicative of the lack of adequate knowledge and education with regard to dementia in the general population in Croatia. It will be interesting to see if a similar positive-negative structure will be present in the Dutch population.

Two expectations have been formed which will have to be present in order for the DAS to be valid for use in its original form among the general population around Park Vossenberg.

C1. The Dutch translation of the DAS will have to relate to at least two factors: dementia knowledge and social comfort.
C2. Cronbach's alpha will have to be at least 0.75 on all different factors.

Chapter 3: Translation methods

3.1 Forward-backward translation and expert interviews

Before the questionnaire was translated the developers of the original questionnaire were informed. Forward-backward translation was used for the translation of the DAS to Dutch according to guidelines set out by Acquadro, Conway, Hareendran et al (2008) based on their literature review of methods to translated health-related quality of life measures, in which they recommend a multi-step procedure.

A forward translation was produced by the author of this thesis. This translation was discussed among a panel of three people with a background in health research. The first translation was then back-translated by a Dutch speaking American expert in the field of the English language. This second translation was then discussed among the different translators involved in the translation process. The final translation was then discussed among experts in the field of dementia for eventual differences in cultural, conceptual and expressional factors. The original DAS contains 20 items which were ordered in the same way as the original scale for the Dutch questionnaire. A decision was made to use 'dementia' instead of 'Alzheimer's disease and related diseases' (ADRD) which was used in the original questionnaire by O'Connor and McFadden (2010). ADRD was used because of doubts among

the authors that respondents would wonder whether Alzheimer is a form of dementia (O'Connor & McFadden, 2010). Dementia is however the most used term among the general population in The Netherlands, and is also used in the communication from Park Vossenberg to the residents of the surrounding areas, which is the target population for this specific research.

The translation was discussed among different experts in the field of dementia and people who are in other ways involved with dementia; such as care workers and representatives of Park Vossenberg to find out whether the questions in the questionnaire are culturally relevant.

3.2 Cognitive interviews

After the backward-forward translation and the discussion of the questionnaire among different experts in the field of dementia cognitive interviews were conducted to make an early test of validity and reliability. Cognitive interviews have been found to be more sensitive with regard to detecting problematic questions then quantitative methods of analysis (Triemstra, de Boer, Koopman et al, 2016). The cognitive interviews served four goals: establishing whether questions are understandable for the target population, establishing content validity by establishing whether questions are correctly interpreted, ask whether the questions are in a logical order and establish whether answer options were missing or unclear. A heterogeneous group of five people was interviewed. They were selected based on age, education level and ethnic background, which is in line with recommendations by Guest, Bunce and Johnson (2006) for getting a saturated pool of participants with few participants. Table 2 gives an overview of the interviewees that participated in the cognitive interviews.

Table 2: Participants cognitive interviews (age, education, ethnic background)

	Age	**Education**	**Ethnic background**
Participant 1	60	Middle-educated	Dutch with a foreign background
Participant 2	55	Low-educated	Dutch native
Participant 3	25	High-educated	Dutch native
Participant 4	78	Low-educated	Dutch native
Participant 5	20	High-educated	Dutch with a foreign background

Two techniques which are integral of cognitive interviews (Willis, 2005) were used during the cognitive interviews: thinking aloud and probing. Participants were asked to fill in the questionnaire while thinking aloud and questions were asked by the interviewer when the participant seemed unsure about a certain term or in any other way indicated that aspects were unclear. Problems that occurred were classified using the classification scheme of Willis (1999) (table 3).

Table 3: Coding system for classifying questionnaire problems Willis (1999). Taken from Buers, Triemstra, Bloemendal (2013)

Clarity: Problems with the intent or meaning of a questions
Subcategories: wording technical term, vague and lack of reference periods
Knowledge: Likely to not know or have trouble remembering information
Subcategories: knowledge, recall, computation
Assumptions: Problems with assumptions or underlying logic
Subcategories: inappropriate assumptions, assuming constant behavior and double-barreled
Response categories: Problems with the response categories
Subcategories: missing, mismatch question-answer, vague, open-ended questions, overlapping and illogical order
Sensitively: Sensitive nature or wording/bias
Subcategories: sensitive content (general), sensitive wording (specific) and socially acceptable
Instructions: Problems with introductions, instructions or explanations
Formatting: Problems with lay out or question ordering

Chapter 4 Results interviews

4.1 Expert interviews

The discussion of the DAS among experts led to a few changes to the questionnaire. ADRD was as mentioned earlier changed to dementia. Item 1 '*Het is bevredigend om met mensen met dementie te werken'* was excluded from the questionnaire and the wording of item *5 'Ik heb er geen moeite mee om mensen met dementie aan te raken'* was changed to '*ik heb er geen moeite mee om met mensen met dementie om te gaan*'. They were changed due to them being too focused on the providers of care towards people with dementia. Item number 1 was also changed during the Croatian validation of the DAS into 'it is rewarding to associate with people who have ADRD (Coso and Mavrinac, 2012). Issues were also raised with regard to item 20 *'Moeilijk gedrag kan een manier van communiceren zijn voor mensen met dementie'* and whether the target population would be able to understand what was meant with difficult behavior. This did however not lead to changes in the questionnaire since this issue was not raised during the cognitive interviews. No issues were mentioned in the discussion with the different experts with regard to questions being not fitting for the Dutch cultural context.

4.2 Cognitive interviews

A couple of different issues came forward during the conduction of the cognitive interviews. According to the classifications of Willis (1999) especially issues related to knowledge occurred, and a few times problems related to clarity and assumptions were mentioned. Almost all interviewees, except for the one person with knowledge on dementia due to her husband having been affected by it a long time ago, noted difficulties with answering some questions of which they stated they had not adequate knowledge. These issues were however deemed as not problematic, since a lack of knowledge can be part of one's attitudes towards dementia. Item 1 was removed as mentioned earlier and the wording of item 5 was changed. The other questions that came up did not come up structurally and were not deemed as problematic during the interviews with experts.

No problems were mentioned with regard to formatting, instructions and sensitively worded questions. The original version of the DAS, the first translation of the DAS and the final version of the DAS are added in the appendix.

Chapter 5: statistical validation DAS

5.1 Participants

A sample of the target population was asked to fill in the questionnaire. Researchers handed out a total of around 500 questionnaires in the neighborhoods surrounding Park Vossenberg. Most questionnaires were put in the mailbox of possible respondents, but around 150 doorbells were rung to personally ask potential respondents to participate and inform them on the aim of the research. These respondents were chosen randomly. Six to seven days after the distribution of the questionnaire another round was made across the houses which received the questionnaire to personally ask whether residents were willing to fill in the questionnaire. Questionnaires were then picked up on the spot. Residents that were not personally contacted were able to send the questionnaire back for free. The area that was covered can be found in the appendix.

The aim of the research project this thesis is a part of is to track attitude change over time, due to time restrictions and the changes in Park Vossenberg not being finished, this is not possible in this thesis. The minimum sample size was computed using Stata. Norman, Sloan and Wyrmich (2003) described the minimally important difference (MID) for health-related quality of life instruments. It was determined that a minimal important difference consistent with real significance instead of just statistical significance is half a standard deviation of the initial score. This initial score was taken from the original development of the Dementia Attitude Scale of O'Connor and McFadden (M=98.64, SD=12.82). Following the aims for a minimal important difference by Norman et al (2003) the effect size was determined (effect size d = 0.5). Power was set high at 0.95 to minimize probability of error. This led to a total sample size of N = 210 for the measurement of change over time. Due to this thesis being focused on only the goal for the first measurement N was set at 105 (N=105).

Around 500 questionnaires were printed and distributed across the different neighborhoods surrounding Park Vossenberg. In every street in which questionnaires were distributed 10 houses were randomly chosen to ring the doorbell and give a personal explanation of the goal of the study and residents were asked on the spot to fill in the questionnaire in order to increase the response rate. Respondents who send back the questionnaire without filling in the DAS were excluded from the analysis. Respondents that skipped a couple of questions were retained by giving them the modal answer on the questions that they skipped. The eventual sample for the validation of the DAS in this thesis consisted of 35 men and 55 women, two respondents did not fill in their gender . Ages ranged from 25 to 92 (Mean = 60.10, SD = 15.34). This is not enough to track change over time following the guidelines of Norman, Sloan and Wyrmich (2003). The research project this thesis is part of will thus have to increase the response rate in order to be able to adequately track change over time.

5.2 Analysis

Statistical analysis was conducted with Stata. Confirmatory factor analysis was conducted in order to establish whether the items of the Dutch translation of the DAS loaded on the same factors as the items in the original scale and to what extent. In order to establish convergent validity the Attitudes towards Dementia Questionnaire (ADQ) was also administered. This is in line with recommendations of both O'Connor and McFadden (2010) and Coso and Mavrinac (2016) who both stated that further convergent validity testing should be conducted with measures like the ADQ. The ADQ was part of the questionnaire send out to the residents of the areas surrounding Park Vossenberg. The ADQ was developed by Lintern, Woods and Phair (2000) and measures hopefulness and person-centered approaches. The ADQ had to be recoded in such a way that a higher score corresponded with more positive attitudes in order to ease comparison with the DAS. The items of the DAS were rated on a 7 point Likert scale in which a higher score related to more positive attitudes. Several negatively stated items also had to be recoded for the DAS so that a higher score corresponded with more positive attitudes.

Items in the ADQ which were too similar to questions in the DAS were removed from the ADQ. This was necessary since the ADQ was part of the same questionnaire as the DAS, and otherwise participants would have to fill in the same questions twice. A consequence of this is that convergent validity is expected to be low. Three more items were removed from the ADQ scale due to the increase in Cronbach's alpha upon their removal, from .480 to .678. This alpha is still relatively low but during the validation of the ADQ among the Dutch general population by Van Beek and Gerritsen (under review) a similar low Cronbach's alpha was found of .72 among a much larger sample.

Principal component analysis was conducted for the exploratory factor analysis since there is still little research with regard to attitudes towards dementia in the Netherlands. This lack of

knowledge on attitudes towards dementia was also the reason for the conduction of principal component analysis by Coso and Mavrinac (2016) in their Croatian validation of the DAS.

5.3 Results

Table 1 shows the descriptive statistics of both the DAS and the ADQ. Mean total scores, standard deviations and Cronbach's alpha are displayed. Table 2 shows the means and standard deviations of the different questions of the DAS plus the median and modal answer. Table 3 shows the correlations of the different items in the DAS.

Table 4: Descriptive statistics and reliability for the DAS and the ADQ

Scale	N	M	SD	Cronbach's α
DAS	92	98.62	14.21	.858
ADQ	92	30.27	2.786	.678

Note: DAS = Dementia Attitude Scale. ADQ = Approaches to Dementia Questionnaire

Pearson's correlation did not show a significant correlation between the DAS and the ADQ $r(91) = .193$, $p = .066$. No proof was thus found for convergent validity between the ADQ and the DAS in its original form.

Table 5: Descriptive statistics of the DAS (N =92) (unreversed scores)

Item	M	SD	Median	Modus
A. Ik ben bang voor mensen met dementie.	1.891	1.010	2	2
B. Mensen met dementie kunnen creatief zijn	5.217	1.332	6	6
C. Ik voel me zelfverzekerd bij mensen met dementie	4.130	1.328	4	4
D. Ik heb er geen moeite mee om met mensen met dementie om te gaan	4.989	1.667	6	6
E. Ik voel me niet prettig in de aanwezigheid van mensen met dementie	2.315	1.099	2	2
F. Iedere persoon met dementie heeft unieke behoeftes	5.534	1.500	6	6
G. Ik ben niet erg bekend met dementie	3.565	1.894	4	2
H. Ik zou een opgewonden persoon met dementie vermijden	3.196	1.521	3	4
I. Mensen met dementie hebben graag bekende dingen om zich heen	5.870	1.277	6	6
J. Het is belangrijk om het verleden van mensen met dementie te kennen	5.489	1.371	6	6
K. Je kunt genieten van omgaan met mensen met	5.359	1.395	6	6

dementie				
L. Ik voel me ontspannen bij mensen met dementie	4.435	1.385	4	4
M. Mensen met dementie kunnen genieten van het leven	5.446	1.386	6	6
N. Mensen met dementie voelen het wanneer andere mensen aardig tegen hen zijn	5.565	1.286	6	6
O. Ik voel me hulpeloos omdat ik niet weet hoe ik mensen met dementie kan helpen	3.293	1.544	3.5	2
P. Ik kan me niet voorstellen hoe het is om te zorgen voor iemand met dementie	3.446	1.750	3.5	2
Q. Ik heb er bewondering voor hoe mensen met dementie zich weten te redden	5.293	1.347	6	6
R. We kunnen tegenwoordig veel doen om de kwaliteit van leven van iemand met dementie te verbeteren	5.696	1.264	6	6
S. Moeilijk gedrag kan een manier van communiceren zijn voor mensen met dementie	5.293	1.163	6	6

The possible range on the scale was between 19 and 153. Mean scores on the items ranged from 1.891 to 6.109. Inspection of the Mean, Median and Mode scores indicates that the data in this sample is rather skewed. For the population of Park Vossenberg this indicates that residents generally have positive attitudes towards dementia.

5.4 Factor analysis

5.4.1 Confirmatory factor analysis

O'Connor and McFadden identified two factors in their validation of the DAS. Confirmatory factor analysis was executed based on these two factors. Both a single factor model and a two-factor model were analyzed. Single factor model sample size dependent chi-square was significant X^2 (152) = 454.31 P < .001). This indicates that the single factor model seems to be a good fit. Root Mean Square Of Approximation (RMSEA) is significant (RMSEA=.147, p<.001) which indicated a good fit. Comparative Fit Index is low (CFI=.586) which would mean the model fit is not satisfactory.

Chi-square for the two-factor model was also significant X^2 (151) = 425.59 P < .001). Chi-square again indicates that this model is a good fit. Goodness of fit indices for the two-factor model show that the RMSEA is good with (RMSEA=.141, p <.001). CFI is slightly higher in the two-factor model (CFI=.624) but still not adequate. Results of the confirmatory factor analysis are displayed in table 4. Model fit seems reasonable, but not ideal. The two-factors were significantly correlated (r =.732, P <.001).

Table 6: Results confirmatory factor analysis DAS with two factors according to O'Connor and McFadden (2010)

	Factor 1: Comfort	*Factor 2: knowledge:*
D. Ik heb er geen moeite mee om met mensen met dementie om te gaan	.796	
L. Ik voel me ontspannen bij mensen met dementie	.774	
C. Ik voel me zelfverzekerd bij mensen met dementie	.532	
B. Mensen met dementie kunnen creatief zijn	.528	
A. Ik ben bang voor mensen met dementie.	.499	
E. Ik voel me niet prettig in de aanwezigheid van mensen met dementie	.447	
F. Iedere persoon met dementie heeft unieke behoeftes	.435	
O. Ik voel me hulpeloos omdat ik niet weet hoe ik mensen met dementie kan helpen	.386	
H. Ik zou een opgewonden persoon met dementie vermijden	.364	
P. Ik kan me niet voorstellen hoe het is om te zorgen voor iemand met dementie	.349	
G. Ik ben niet erg bekend met dementie	.275	
N. Mensen met dementie voelen het wanneer andere mensen aardig tegen hen zijn		.816
M.. Mensen met dementie kunnen genieten van het leven		.774
K. Je kunt genieten van omgaan met mensen met dementie		.740
Q. k heb er bewondering voor hoe mensen met dementie zich weten te redden		.681
I. Mensen met dementie hebben graag bekende dingen om zich heen		.603
R. We kunnen tegenwoordig veel doen om de kwaliteit van leven van iemand met dementie te verbeteren		.569
J. Het is belangrijk om het verleden van mensen met dementie te kennen		.532
S. Moeilijk gedrag kan een manier van communiceren zijn voor mensen met dementie		.432

Confirmatory factor analysis shows that when forced the factor structure identified by O'Connor and McFadden (2010) does become apparent to a certain extent, but especially on the 'comfort' factor, factor loadings are very low for four items. The goodness of fit indices indicate that the model has a

reasonable, but not ideal fit. These findings justify the conduction of further exploratory factor analysis for the DAS among a sample of the general population.

5.4.2 Exploratory factor analysis

Following the Kaiser rule only factors with an eigenvalue above 1 were retained (Kaiser, 1960). Principal component analysis extracted four factors with an eigenvalue above 1. Principal component analysis with Oblimin rotation identified four factors. This showed a factor structure in which 13 items loaded on the first factor, 3 items on the second factor , 4 items on the third factor and 4 items on the fourth factor (see table 5). The four factors that were identified accounted for 62.3 percent of the variation. Kaiser-Meyer-Olkin measure (KMO) of sampling adequacy was high with .816, which indicates that the sampling is adequate. Bartlett's test of sphericity was significant with $p < .001$. This shows that the sample consists of related variables, and principal component analysis is there for suitable.

Table 7: Exploratory factor analysis with Oblimin rotation which loaded four factors with Eigenvalue > 1 (N=92)

	Factor 1	*Factor 2*	*Factor 3*	*Factor 4*
N. Mensen met dementie voelen het wanneer andere mensen aardig tegen hen zijn	0.820			
M. Mensen met dementie kunnen genieten van het leven	0.817			
R. We kunnen tegenwoordig veel doen om de kwaliteit van leven van iemand met dementie te verbeteren	0.753			
K. Je kunt genieten van omgaan met mensen met dementie	0.721			
Q. Ik heb er bewondering voor hoe mensen met dementie zich weten te redden	0.664			
L. Ik voel me ontspannen bij mensen met dementie	0.663			
B. Mensen met dementie kunnen creatief zijn	0.645			
I. Mensen met dementie hebben graag bekende dingen om zich heen	0.536			0.531
C. Ik voel me zelfverzekerd bij mensen met dementie	0.528			
D. Ik heb er geen moeite mee om met mensen met dementie om te gaan	0.520		0.503	
S. Moeilijk gedrag kan een manier van communiceren zijn voor mensen met dementie	0.490			
G. Ik ben niet erg bekend met dementie		0.871		

P. Ik kan me niet voorstellen hoe het is om te zorgen voor iemand met dementie		0.865		
O. Ik voel me hulpeloos omdat ik niet weet hoe ik mensen met dementie kan helpen		0.628	0.446	
A. Ik ben bang voor mensen met dementie.			0.796	
E. Ik voel me niet prettig in de aanwezigheid van mensen met dementie			0.699	
J. Het is belangrijk om het verleden van mensen met dementie te kennen	0.425			0.730
F. Iedere persoon met dementie heeft unieke behoeftes	0.416			0.668
H. Ik zou een opgewonden persoon met dementie vermijden				-0.516
Eigenvalue	6.049	3.409	1.285	1.102
Percentage of variance explained	31.8%	17.9%	6.8%	5.8%

Due to the lack of a clear structural form in which seven items still loaded on multiple factors, principal component analysis was conducted again with three and two factors. Principal component analysis with 3 factors did again not show a clear factor distribution (see appendix 1.1), with multiple items still loading on multiple factors. Principal component analysis with two factors and Oblimin rotation did show a more clear factor distribution in which two factors were clearly identified (see table 8). Factor 1 showed a high reliability (α = .895) the alpha of factor 2 was lower but still reasonable (α =.799). Factor 1 accounted for 31% of the variation, factor 2 accounted for 18.8% of the variation. Extra forced factor analysis with one factor showed six items not adequately loading on the factor (see appendix 2.1). A two-factor model there for seems most fitting.

Table 8: Exploratory factor analysis with two factors with Oblimin rotation (n=92)

	Factor 1	***Factor 2***
N. Mensen met dementie voelen het wanneer andere mensen aardig tegen hen zijn	.802	
M. Mensen met dementie kunnen genieten van het leven	.755	
K. Je kunt genieten van omgaan met mensen met dementie	.745	
Q. Ik heb er bewondering voor hoe mensen met dementie zich weten te redden	.744	
B. Mensen met dementie kunnen creatief zijn	.697	
L. Ik voel me ontspannen bij mensen met dementie	.677	
F. Iedere persoon met dementie heeft unieke behoeftes	.669	
I. Mensen met dementie hebben graag bekende dingen om zich heen	.669	
J. Het is belangrijk om het verleden van mensen met dementie te	.657	

kennen		
D. Ik heb er geen moeite mee om met mensen met dementie om te gaan	.629	
R. We kunnen tegenwoordig veel doen om de kwaliteit van leven van iemand met dementie te verbeteren	.549	
C. Ik voel me zelfverzekerd bij mensen met dementie	.511	
S. Moeilijk gedrag kan een vorm van communiceren zijn voor mensen met dementie	.492	
P. Ik kan me niet voorstellen hoe het is om te zorgen voor iemand met dementie		.775
O. Ik voel me hulpeloos omdat ik niet weet hoe ik mensen met dementie kan helpen		.759
G. Ik ben niet erg bekend met dementie		.705
H. Ik zou een opgewonden persoon met dementie vermijden		.697
E. Ik voel me niet prettig in de aanwezigheid van mensen met dementie		.656
A. Ik ben bang voor mensen met dementie		.560
Eigenvalue	6.049	3.409
Percentage of variance explained	31%	18.8%

The Croatian validation of the DAS by Coso and Mavrinac (2016) identified a positive-negative structure. A similar positive-negative structure was found among this sample of the general population. The structure of factors did also strongly differ in this sample compared to the original factors identified by O'Connor and McFadden (2010), similar to the findings of Coso and Mavrinac (2016). The two factors are not correlated r(91)=.144, p=.171, which strongly indicates that they do not measure the same construct. Due to the clear positive-negative structure, convergent validity was again tested but now for the two factors separately. Correlation with the first (positive) factor was not significant r (91) = .12, p = .25. Correlation with the second (negative) factor was also not significant with r (91) = .121, p =.11.

5.5 Summary

Confirmatory factor analysis based on the factors identified by O'Connor and McFadden (2010) showed a similar structure as during the original validation of the DAS when forced, but factor loading scores during the principal component analysis did differ strongly from the original validation. Two new factors emerged that were also present during the Croatian validation of the scale. All items with a positive valence loaded on one factor, and all items with a negative valence loaded on the other factor. Both factors are not correlated. This indicates that both factors do not measure the same construct and that the DAS in its original is not fit for measuring attitudes towards dementia among the general population. Convergent validity was not established for both factors which could be explained by the small number of items remaining in the ADQ.

In the second part of this thesis hypotheses are formulated to explain variation in attitudes towards dementia. Regression and bivariate analyses that will be conducted will take both sub-scales into consideration as dependent variables for the measurement of attitudes towards dementia. The first factor subscale will be referred to as 'positive scale', the negative factor subscale will be referred to as 'negative scale'. The complete scale of the DAS will also be included in the regression analyses since it did show high reliability ($\alpha = .858$), it is however unidimensional as was shown in the factor analysis.

Part 2: Explaining variation in Dementia attitudes

Chapter 6

6. Theoretical framework and hypothesis

This thesis is focused on one of the goals behind the creation of Park Vossenberg that aims at changing the attitudes of the residents of the areas surrounding Park Vossenberg towards dementia. Next possible causes of differences in attitudes towards dementia will be identified and theories which can be applied to these factors will be discussed. The hypotheses that will be identified in this section have lead to questions that were added to the questionnaire.

6.1 Contact theory and familiarity

A prominent theory in the field of attitudes between groups is the intergroup contact theory developed by Pettigrew (1998). This theory was also used by O'Connor and McFadden (2010), underlying the assumptions used for the initial development and validation of the DAS. This theory states that behavior change is able to occur through increased contact between groups. This is the same mechanism which is underlying the expected change in attitudes from the residents of the area surrounding Park Vossenberg. A meta-analysis of this theory done by Pettigrew and Tropp (2006) of over 515 studies in which the intergroup contact theory was tested showed consistent positive results. For his initial theory Pettigrew (2016) built on the intergroup contact theory developed by Allport (1954) which stated that several conditions had to be in place in order for contact to reduce intergroup bias, namely equal status between groups, common goals, cooperation between groups and authoritative support for the contact. Not all these factors are present in the intervention in Park Vossenberg and research has shown that these factors are not necessary in order to reduce intergroup bias, but do play a facilitating role (Pettigrew, 2016; Schmid, Hewstone, Tausch, Cairns and Hughes, 2009). Intergroup contact has been shown to still give positive results when these factors are not present, but effects are generally smaller.

Positive effects of intergroup contact have also been shown for groups that differ in mental abilities (Pettigrew, 2006), which is relevant for the intervention in Park Vossenberg. Contact bears the opportunity to transform cognitive representations of 'us' and 'them' to 'we' (Gaertner, Samuel et al, 1994) . This thinking in 'us' and 'we' is an often mentioned cause and consequence of the stigmatization of people with dementia (O'Connor & McFadden, 2010).

These general positive results, even without the 'necessary' factors identified by Allport (1954) have shown that an underlying process is present through which familiarity can lead to liking (Pettigrew, 2016). Individuals tend to fear the unknown and repeated interaction can lead to greater familiarity through which uncertainty is reduced and attitudes altered (Montoya, Horton, Veves et al, 2017).

Direct contact has not only been shown to change attitudes, indirect contact has also been shown to bear the possibility to change attitudes. This is an effect that is known as the mere exposure effect, which has been developed by Zajonc (1968). According to Zajonc (1968) repeatedly being exposed to a certain stimulus is able to lead to that stimulus being perceived as more positive and to a more positive overall affective state. The mere exposure effect is underlying the concept of public familiarity as developed by Blokland and Nast (2014). According to this concept seeing people in a certain context will make them more familiar with someone, which will lead to that person feeling more at ease around them without actually knowing them. This notion is important for Park Vossenberg, since the contact between the residents of Park Vossenberg and the residents of the area surrounding Park Vossenberg is not necessarily contact in the sense of conversations or direct cooperation. The mere exposure effect also manifested itself in a research project done by Gaertner, Mann, Dovidio, Murell and Pumare (1990). They show that factors that do not relate to cooperation, such as seating arrangements, are able to lead to reduced bias between groups. Zajonc (2001) found that people do not even have to engage in a certain form of behavior, nor have to be given reinforcement in order for positive attitude change to occur. Corrigan, Green, Lundin et al (2001) also found that increased public familiarity with mental illnesses will decrease stigma.

People who have a personal relationship with a person with dementia have also been found to have less stigmatizing attitudes towards people with dementia (Hermann et al, 2017). Due to the prevalence of literature stating that a personal relationship with someone who has dementia will lead to less stigmatized attitudes (Hermann et al, 2017; Cheng, Lam, Chan et al, 2011; Phillipson, Magee, Jones, Reis and Skaldzien, 2015; Corrigan, Green, Lundin et al, 2001), it can be expected that personal relationships and contact with someone who has dementia will have a strong effect on personal attitudes, as well as being publicly familiar. These findings have led to the following hypotheses that could be interesting for further research, and can have important policy implications due to the focus on indirect contact in Park Vossenberg.

Hypothesis 1: People that personally know a person affected by dementia will have more positive attitudes towards dementia.

Hypothesis 2: Public familiarity with a person affected by dementia will lead to more positive attitudes towards dementia

Contact theory can be applied to the mechanism of personal contact. It can be expected that having a personal relationship with someone who has dementia will have a stronger effect on one's attitudes when there is more contact with that person. This leads to the following hypothesis:

Hypothesis 3: More contact with a personal acquaintance with dementia will lead to more positive attitudes towards dementia

A hypothesis can also be formulated based on the nature of the relationship. Angermeyer, Matschinger and Corrigan (2004) found that a close relationship with a person affected by a mental illness leads to a reduced response of anxiety and greater tolerance towards that person, effects have been found to be stronger when contact is close (Corrigan et al, 2001). This has led to the following hypothesis:

Hypothesis 4: The closer one's relationship with a person affected by dementia, the more positive one's attitudes will be towards dementia

6.2 Local embeddedness:

One of the main goals of Park Vossenberg is to change the relationship between the care facility and the residents of the surrounding areas. Many of the residents of Park Vossenberg have relatives living in the surrounding areas, and many of the care workers in Park Vossenberg come from the surrounding area. Such contact between care workers and residents of the areas surrounding Park Vossenberg can be described as boundary-crossing networks according to the definition by Reagans and Zuckerman (2001) since these local networks place care workers in direct contact with a party outside the organization. Van Beek et al (2013) noted that embeddedness in such a network could lead to information exchange between the residents of the surrounding areas and the care workers, which would in turn affect the behavior and attitudes of the nursing staff through the exchange of information about elderly residents. It was indeed found that in units with more boundary crossing ties, staff was more at ease, residents were treated with more respect and approached more friendly (Van Beek et al, 2013).

Local embeddedness is not only able to facilitate an exchange of information among people in the network, but can also lead to increased trust between actors through a so-called 'reputation effect'. This reputation effect is a mechanism which has been extensively described in network research and inter organizational research, and recently in relation to healthcare outcomes (Granovetter, 1985; Batenburg, Raub and Snijders, 2003; Van Beek et al, 2013). Embeddedness in a network leads to actors knowing each other, and actors having the possibility to punish bad behavior of an actor. A limitation of the study by Van Beek et al (2013) was that the exact mechanism behind the relationship between boundary-crossing networks and staff behavior was not clear, whether this was due to the exchange of information or the increased trust and control residents surrounding the care facility had due to the embeddedness of the care workers in local networks. In the questionnaire which was send out to residents of the areas surrounding Park Vossenberg questions were added with regard to this control mechanism which could affect one's reputation, this mechanism will however not be discussed in this thesis.

The effect of boundary-crossing ties on the behavior and attitudes of the residents surrounding Park Vossenberg has not yet been investigated, even though information exchange could still take place. Knowledge of dementia is also a factor of the DAS, in which a higher level of knowledge is associated with more positive attitudes (O'Connor & McFadden, 2010). Contact with a person that works with people affected by dementia will lead to information exchange taking place and thus likely an increase in knowledge. Research has shown that increased knowledge on a mental illness will lead to less of a wish for social distance (Corrigan et al, 2001). Building on the findings of Van Beek et al (2013) the expectation can be made that residents that know a care worker in Park Vossenberg, will have more knowledge on, and there for more positive attitudes towards dementia.

Hypothesis 5: People who personally know a care worker who works with people affected by dementia will have more positive attitudes towards dementia.

Contact theory can again be applied to this mechanism. It can again be expected that the frequency of contact will influence the amount of information which is exchanged, and in turn the attitudes towards dementia. This leads to the following hypothesis:

Hypothesis 6: More contact with a person who works with people affected by dementia will lead to more positive attitudes towards dementia

6.3 Summary hypotheses and further analysis

Due to limitations with regard to questions that could be added to the questionnaire not all described hypothesis have a proper way to be operationalized in the analysis. This applies to hypothesis 2 and 6. Hypothesis 2 related to public familiarity with people that have dementia. Hypothesis 6 related to the frequency of contact one has with a person that works with people affected by dementia.

Chapter 7: Data and methods

7.1 Participants

Participant were 92 residents of the neighborhoods surrounding Park Vossenberg 55 women and 35 men. Age ranged from 25 to 92 (M= 60.11, SD = 15.34). The respondents of this questionnaire is not representative for the municipality of Kaatsheuvel, which consists of 49.5% men and 50.5% women (Centraal Bureau voor de Statistiek, 2018). The sample for these analysis is however lower which is due to respondents not filling in all questions. Only people that answered all questions on the variables included in the regression analyses were part of the regression analyses.

7.2 Analysis

Regression analyses were conducted for the different hypotheses. Bivariate relationships were measured to analyze differences in mean scores based on sex, age and education. The data which was obtained by sending out the questionnaire described in part 1 was also used for the analysis in part 2.

7.2.1 Dependent variables

Three dependent variables were used to measure attitudes towards dementia based on the factor analysis which has been conducted in part 1. The first factor contain items N, M, K, Q, B, L, F, I, J, D, R, C and S from the DAS, the second factor contains items P, O, G, H, E and A (see table 8). The third variable consists of the complete DAS scale.

7.2.2 Independent variables

For hypothesis 1 the independent variable was used which related to the question *'kent u iemand met dementie'* which is a dummy variable.

For hypothesis 3 a dummy variable was created in which people that have a partner, father, mother, sister or brother affected by dementia were grouped together and scored with 1, and the people with a less close relationship with 0.

For hypothesis 4 a variable was created in which people who have contact at least one's a week with their acquaintance who has dementia are grouped together, and people that have contact with their personal acquaintance less then one's a week are grouped together. The group with high contact was scored with 1, the group with low contact was scored with 0.

For hypothesis 5 a dummy variable was which related to the questions 'Kent u iemand die in de dementiezorg werkt?'.

Table 9: Scores, means, missings and standard deviations of all variables used for the regression analyses (N=92), negative items of the DAS are recoded

Variable	***Question(s)***	***Score***	***Missings***	***Mean***	***SD***
Dependent variables					
Das_complete	All items from the DAS	1 = Sterk mee oneens 2 = Oneens 3 = Min of meer mee oneens 4 = Neutraal 5 = Min of meer mee eens	0	*5.191*	*14.209*

		6= Eens 7 = Sterk mee eens			
Positive factor	Items N, M, K, Q, B, L, F, I, J, D, R, C, S of the DAS	1 = Sterk mee oneens 2 = Oneens 3 = Min of meer mee oneens 4 = Neutraal 5 = Min of meer mee eens 6= Eens 7 = Sterk mee eens	0	*5.256*	*11.813*
Negative factor	Items P, O, G, H, E and A	1 = Sterk mee oneens 2 = Oneens 3 = Min of meer mee oneens 4 = Neutraal 5 = Min of meer mee eens 6= Eens 7 = Sterk mee eens	*0*	*5.048*	*6.377*
Independent variables					
Demper	'Kent u iemand met dementie'	Dummy variable, 1=yes 0=no	*2*	*.633*	
ConPLRL	Hoe vaak heeft u contact met deze persoon?'	(1 = Nooit, 2 = Minder vaak dan één keer per maand, 3 = Één of meerdere keren per maand, 4 = Één of meerdere keren per week, 05 = Elke dag	*38 do not apply*		
Relationship	'Wat is uw relatie met deze persoon'	10=andere relatie, 9=(Oud) collega 8=Buurman/buurvrouw of andere buurtbewoner	*8 missing, 38 do not apply*		

		7=Vriend/vriendin of goede kennis 6=Ander familielid 5=Neef/nicht 4=Oom/tante 3=Broer/zus 2=Vader/moeder 1=Partner			
Close relationship		Dummy variable, 1=yes 0=no	*46 do not apply*	*.239*	
Frequent contact		1=yes 0=no	*8 missing, 38 do not apply*	*.352*	
Demcare	'Kent u iemand die in de dementiezorg werkt?'	Dummy variable, 1= yes 0 = no	*2*	*.456*	
Control variables					
Sex	Wat is uw geslacht?	1=man 0=vrouw	*2*	*.389*	
Age	Wat is uw leeftijd?	…jaar	*3*	*60*	*15.38*
Schooling	Wat is uw hoogst voltooide opleiding?	1=Geen opleiding 2= Lager of voorbereidend onderwijs 3=Anders 4=Middelbaar algemeen voortgezet onderwijs 5=Middelbaar beroepsonderwijs en beroepsbegeleidend	*3*	*4.17*	*2.252*

	onderwijs 6=Hoger algemeen en voorbereidend wetenschappelijk onderwijs 7=Hoger beroepsonderwijs 8=Wetenschappelijk onderwijs

7.2.3 Control variables

Questions with regard to the gender, age and education level of respondents were added to the questionnaire and will serve as control variables. Phillipson, Magee, Jones and Skladzien (2014) found that men were more likely to avoid people with dementia, and noted that this is in line with differences between men and women related to stigma towards other mental illnesses.

Phillipson et al (2014) also found that people with a higher age were more likely to be accepting towards individuals with dementia. This could potentially be explained by the increased familiarity older people generally have with dementia.

Education level has also been found to be related to more negative attitudes (Phillipson et al, 2014). Lower education was found to be related to a stronger tendency to avoid people with dementia. Education was recoded to the variable 'schooling' since the respondents that filled in 'anders' and described the education they did receive, all described an education level that can be regarded as relatively low.

7.2.4 Variables bivariate analyses

Three groups were made based on education level (low, middle, high) which were around the same size. Precisely equal groups were however hard to make due to the relative over-representation of lower educated people in the sample. The variable 'schooling' was split in three. The lower-educated group consisted of people that filled in 'anders', 'geen opleiding' and 'lager of voorbereidend beroepsonderwijs'. The middle educated group consisted of participants that filled in 'middelbaar algemeen voortgezet onderwijs', 'middelbaar beroepsonderwijs en beroepsbegeleidend onderwijs' and 'hoger algemeen en voorbereidend wetenschappelijk onderwijs'. The high-educated group consisted of people that filled in 'hoger beroepsonderwijs' and 'wetenschappelijk onderwijs'.

The variable age was also split into three groups of around the same size (25-54, 54-67 and 67-95) to check whether a linear relationship exists between age and one's attitudes towards dementia. Ages 25-54 form age group 1, ages 54-67 form age group 2 and ages 67-95 form age group 3.

Chapter 8: Results

8.1 Bivariate relationships

Different anova tests were executed to measure differences in attitude towards dementia scores based on age, sex and education. This analysis was again done taking the positive and the negative factor of the scale into account, by dividing the complete scale into two-sub scales based on the factors identified in part 1. Scores on the complete scale were also compared.

8.1.1 Sex

On the complete scale no difference was found between men and women in attitude scores $F(1, 88) = 2.79$, $p=.099$.

On the positive factor no significant difference was found between men and women in attitude scores $F(1, 88) =2.56$, $p=.113$.

On the negative factor also no significant difference was found for men and women on attitude scores $F(1, 88) = .13$, $p=.72$.

Table 10: Bivariate relationship based on sex

	Das complete	**Positive factor**	**Negative factor**
Men	M=95.23	M=65.74	M=29.49
	SD=15.93	SD=13.98	SD=7.09
Women	M=100.29	M=69.82	M=30.47
	SD=12.67	SD=10.17	SD=5.75

8.1.2 Age

On the full scale no significant difference existed between age group 1 and age group 2 on one's attitudes $F(1,53)=.91$, $p=.34$. On the positive factor this was also the case between age group 1 and age group 2 with $F(1, 53)=.05$ and $p=.83$ and also on the negative factor between age group 1 and age group 2 with $F(1, 53)=2.59$ and $p=.11$.

A significant difference did also not exist between age group 1 and age group 3 on the complete scale with $F(1, 58)=2.10$, $p=.15$. This was also the case on the positive factor for age group 1 and age group 3 with $F(1, 58)=3.62$ and $p=.06$. On the negative factor also no significant difference was found between age group 1 and age group 3 with $F(1, 58)=.37$ and $p=.544$.

Finally age group 2 and age group 3 were compared. A significant difference was found between these groups on the full scale with F(1,61)=5.84, p=<.05. This significant difference was also found on the positive factor F(1,61)=4.54, p<.05 but not on the negative factor F(1,61)=1.41, p=.239.

Table 11: Bivariate relationship based on age

	DAS complete	Positive factor	Negative factor
Age group 1	M=99.31	M=70.5	M=28.81
	SD=12.82	SD=8.44	SD=6.27
Age group 2	M=102.66	M=71,	M=31.66
	SD=13.08	SD=8.71	SD=6.79
Age group 3	M=93.91	M=64.15	M=29.76
	SD=15.29	SD=15.32	SD=5.83

8.1.3 Education level

On the complete scale the lower educated group and the middle-educated group did not significantly differ in attitude scores F(1, 64)=.06, p=.814. This was also the case on the positive factor subscale between low and middle educated with F(1, 64)=.01, p=.927. Lower and middle did also not significantly differ on the negative factor F(1, 64)=.55, p=.461.

On the complete scale the lower educated group and the higher educated group did not significantly differ F(1, 61)=.78 and p=.380. On the positive factor subscale no significant difference between low and higher educated with F(1, 61)=1.21, p=.276. Also no significant difference between the low and higher educated group on the negative factor with F(1, 61)=.00, p=.95.

Finally the middle educated and the higher educated group were compared. No significant difference was found on the complete scale F(1, 48)=.99, p=.326. Also no significant difference was found on the positive factor F(1, 47)=.78, p=.381 and the negative factor subscale F(1, 47)=.30, p=.586.

Table 12: Bivariate relationships based on education level

	DAS complete	Positive factor	Negative factor
Low	M=97.95,	M=67.2	M=30.75
	SD=13.28	SD=13.67	SD=6.03
Middle	M=97.07,	M=67.5	M=29.57
	SD=16.53	SD=13.67	SD=6.64
High	M=101.09	M=70.4	M=30.65
	SD=14.03	SD=8.62	SD=7.09

8.1.4 Summary anova's

The anova's that were conducted did not show many significant differences between groups. No significant differences were found based on sex and education level. Only between the middle-age and the high-age age groups a significant difference in attitudes seems to exist. This relationship is however not linear, since the low and high age group did not significantly differ on attitude scores. None of the expected relationships based on sex, age and education thus seem to exist in this sample of the general population.

8.2 Regression analyses

Hypothesis 1 focused on the relationship between knowing a person affected by dementia and one's attitudes towards dementia. For the complete scale the relationship between knowing a person with dementia and one's attitudes was not significant (B=5.124, t=1.53, p=.130). The model without control variables accounted for 2.3% of the variation (R^2=.023). The model with control variables accounted for 7% of variation (R^2=.070).

For the scale with the positive factor the relationship between knowing a person affected by dementia and one's attitudes was not significant (B= 2.520; t=.91, p=.368). The model without control variables accounted for .5% of the variation (R^2 = .005). The model with control variables accounted for 8.8% of the variation (R^2 = .088). Age was significant in this model (B= -.208, p<.05).

For the scale with the negative factor results were also not significant (B= 2.604, t=1.78, p =.079). The model without control variables accounted for 6.9% of the variation (R^2 =.069). The model with control variables accounted for 8.9% of the variation (R^2 =.089). No control variables were significant in the model with the second factor of the DAS. The hypothesis is there for rejected on all scales.

*Table 13: Regression analysis of relationship of knowing a person with dementia on one's attitudes towards dementia, N=84, p<.001*** p<.01** p<.05**

	DAS complete	**DAS factor 1**	**DAS factor 2**
Constant	104.54***	81.758***	22.783***
'Kent u iemand met dementia?' 1=ja, 0=nee	5.124 (p=.130)	2.520 (p=.368)	2.604 (p=.079)
Sex	-5.347	-3.555	-1.793
Age	-.117	-.208*	.091
Schooling	-.096	-.366	.270
R-squared	.070	.089	.089

Hypothesis 3 focused on the relationship between frequency of contact with a person that someone knows with dementia on one's attitudes towards dementia. Significance level was set high at .10 due to the low sample size. On the complete scale no significant effect was found (B= .737, t=.13, p=.894) of one's frequency of contact with a person with dementia on one's attitudes. The model with control variables accounted for 4% of the variation (R^2=.040), the model without control variables accounted for .1% of the variation (R^2=.001).

On the positive factor subscale also no significant relationship was found (B= -4.697, t=-1.05, p=.300). The model with control variables accounted for 10.5% of the variation, the model without control variables accounted for 3.4% of the variation (R^2=.034).

On the second negative factor subscale a significant relationship was found (B=5.434, t=2.61, p = <.05). The model with control variables accounted for 18.7% of the variation (R^2=.187), the model without control variables accounted for 8.8% of the variation (R^2=.088). Age was again significant in this model (B=.143, p<.10).

*Table 14: Regression analysis of the effect of frequent contact with a personal acquaintance with dementia on one's attitudes towards dementia, N=51, p<.001*** p<.01** p<.10**

	DAS complete	**DAS factor 1**	**DAS factor 2**
Constant	109.409***	91.098***	18.312**
Frequentcontact	.737 (p=.894)	-4.697 (p=.300)	5.434*
Sex	-5.094	-2.630	-1.462
Age	-.130	-.273	.114*
Schooling	.099*	-.733	.679
R-squared	.040	.105	.187

Hypothesis 4 focused on whether a close relationship with a person with dementia has a relationship with one's attitudes towards dementia. Due to the low sample size in this model the significance level was set high at p=.10.

The model with the complete scale did not show a significant relationship between having a close relative affected by dementia or having a less close relative affected by dementia (B=.241, t=.04, p=.970). The model with control variables accounted for 3.5% of the variation (R^2=.035), the model without control variables accounted for 0% of the variation (R^2=.000).

The model with the first factor subscale also did not find a significant relationship (B=1.447,

t=.29, p=.772). The model with control variables accounted for 8.3% of the variation (R^2=.083) and the model without control variables accounted for .5% of the variation (R^2=.005).

The model with the second factor subscale also did not find a significant relationship (B=-1.206, t=-.45, p=.658). The model with control variables accounted for 6.5% of the variation (R^2 = .065) the model without control variables accounted for 1% of the variation (R^2 =.001). The hypothesis is there for refuted on all scales.

*Table 15: Regression analysis of the closeness of one's relationship with a personal acquaintance with dementia on one's attitudes towards dementia, N=42, p<.001*** p<.01** p<.10**

	DAS complete	**DAS factor 1**	**DAS factor 2**
Constant	107.504***	85.238***	22.266**
Close relationship	.241 (p=.970)	1.447 (p=.772)	-1.206 (p=.658)
Sex	-2.340	.940	-3.280
Age	-.137	-.274	.137
Schooling	.502	-.004	.506
R-squared	.035	.083	.065

Hypothesis 5 focused on the relationship between knowing a person that works with people with dementia and one's attitudes towards dementia.

The model with the complete scale of the DAS did not show a significant relationship between knowing a person that works with people affected by dementia and one's attitudes towards dementia (B=2.156, t=.68, p=.499). The model without control variables accounted for 1.5% of the variation (R^2=.015). The model with control variables accounted for 5.9% of the variation (R^2=.059).

The model with the first factor of the DAS did not show a significant relationship between knowing a person that works with people affected by dementia and one's attitudes towards dementia (B= -.980, t= -.037, p=.711). The model without control variables accounted for 0% of the variation (R^2 = .000). The model with control variables accounted for 8.6% of the variation (R^2 = .086).

The model with the second factor of the DAS did show a significant relationship (B= 3.136, t =2.30, p < 0.05). The model without control variables accounted for 6.9% of the variation (R^2 = .069). The model with control variables accounted for 12% of the variation (R^2 = .120). In this model the control variable age was the only variable that was significant (B=.115, t=2.19, p<.05).
Only in the model with the second factor subscale of the DAS the hypothesis was not refuted.

*Table 16: The relationship between knowing a person who works with people with dementia on one's attitudes towards dementia, N=84, p<.001*** p<.01** p<.05**

	DAS complete	**DAS factor 1**	**DAS factor 2**
Constant	100.999***	80.594***	20.405***
'Kent u iemand die in de dementiezorg werkt?' 1=ja 0=nee	2.156 (p=.499)	-.980 (p=.711)	3.136*
Seks	-5.858	-4.288	-1.570
Age	-.063	-.178	.115*
Schooling	.475	-.023	.498
R-squared	.059	.086	.120

An extra model was tested in which both the question of whether people know a person affected by dementia and whether people know a person that works with people with dementia were included. This did however not change the effects which have already been found. Table 14 shows the results of this analysis.

*Table 17: The relationship between knowing a person who works with people with dementia plus the relationship between knowing a person affected by dementia on one's attitudes towards dementia, N=83, p<.001*** p<.01** p<.05**

	DAS complete	**DAS factor 1**	**DAS factor 2**
Constant	101.850***	80.996***	20.883***
'Kent u iemand die in de dementiezorg werkt?' 1=ja 0=nee	1.404	-1.518 (p=.584)	2.921*
'Kent u iemand met dementia?' 1=ja, 0=nee	4.192	2.538 (p=.384)	1.654 (p=.270)
Sex	-6.124	-4.429	-.1695
Age	-.091	-.194	.103
Schooling	.174	-.179	.354
R-squared	.078	.095	.141

8.3: Conclusion

Few significant relationships were found in this analysis. Only hypothesis 3 and 5 showed significant results, but only on the second factor subscale of the DAS. The lack of correlation between the subscales can also be identified in the regression analyses. The direction of the relationship often differed between factor subscale 1 and factor subscale 2. Only one analysis showed a significant effect on the control variable age. This is in line with the findings of the anova analyses in which only between the middle- and high age group a significant difference in mean scores was found but no linear effect based on age.

Part 3: Overall conclusions and evaluation

Chapter 10: Overall conclusion

10.1 Validation Dementia Attitude Scale

One of the main purposes of this thesis was to translate and validate the Dementia Attitude Scale (DAS) among the Dutch general population. During the original development of the DAS when the questionnaire was validated for medical students two factors were loaded after factor analysis: *social comfort* and *dementia knowledge* (O'Connor and McFadden, 2010). During the validation of the DAS in Croatia a similar structure became clear with a sample of employees and professionals that have everyday contact with people with dementia, but a completely different structure became apparent when the sample consisted of people from the general population. Among this sample a clear positive-negative structure became clear, in which items with a negative valence were answered negatively and items with a positive valence vice versa (Coso and Mavrinac, 2016).

Backward-forward translation was applied to translate the questionnaire, face validity was established and an effort was made to establish convergent validity by comparing the DAS with the ADQ. Furthermore both confirmatory factor analysis and principal component analysis were conducted. A similar positive-negative structure as in the Croatian sample became clear among the sample of the general population studied in this thesis. The two-scales did not show a correlation, which indicates that both scales do in fact measure something else. The recommendation of Coso and Mavrinac (2016) that the DAS is not appropriate for use across different samples should be drawn. This is due to the big difference in factor loadings in this thesis compared to the original factor loadings during the original development and validation of the scale by O'Connor and McFadden (2010), which also became evident in the confirmatory factor analysis.

This does however not mean that the DAS is useless in measuring attitudes towards dementia. Face validity was established and both factors showed a high reliability. Convergent validity was unfortunately not established in this thesis. This could be explained by the amount of items that unfortunately had to be removed from the ADQ.

The DAS has been developed in a way which places strong emphasis on psychometric rigor by O'Connor and McFadden (2010), and most other commonly used tools to measure attitudes towards older adults have been shown to have psychometric limitations (Kinney et al, 2017; Iwasaki & Jones, 2008). Future research with the DAS could look at whether the same items group together when items are asked in the same valor. Coso and Mavrinac (2016) recommended giving participants bipolar pairs of adjectives on a Likert scale which could be expected to eliminate the positive-negative structure that was also found in their validation of the DAS among a sample of people that do not have everyday contact with people that have dementia. Participants can then fill in their agreement with both adjectives. This could eliminate the positive-negative structure due to items valence being balanced

out. Another option to eliminate the positive-negative structure of the DAS is changing the valence of the negative items to positive (Coso and Mavrinac, 2016). Eliminating this positive-negative structure would increase the chance of the factors in the DAS becoming more similar to the factors identified by O'Connor and McFadden (2010) in their original validation and thus make the DAS more suitable for use among the general population.

A big limitation of this study was that the measure with which the DAS was compared, the ADQ, was too similar on many points to the DAS. Due to the DAS being a part of the questionnaire that was sent out to residents of the area surrounding Park Vossenberg as well as the ADQ, many questions had to be taken out of the ADQ since otherwise residents would have to fill in the same questions twice. On top of this removal of items 3 more items had to be removed due to the low reliability of the scale. This had as a consequence that the probability of correlation with the DAS was very low. Future research aimed at validating the DAS should try to make participants fill in the whole DAS and ADQ to check for convergent validity. This could lead to the convergent validity being more informative. Comparing the DAS with other similar research measures and its correlation with these measures is also recommended. The recently developed Allophilia scale developed by Kinney et al (2017) is especially promising for comparison, due to the focus of both the DAS and the Allophilia scale on psychometric rigor (Kinney et al, 2017).

Another limitation of this study was the relatively small sample size. The target sample as was described earlier based on the requirements for the establishment of a minimal important clinical difference for health-related quality of life instruments by Norman, Sloan and Wyrmich (2003) was set at N = 105. This target was not reached for this research. Due to the relatively high average age of the sample further validation will have to be done in order to use the DAS among a younger sample of the general population without a background in dementia care.

The conclusion can be drawn that the DAS in its original form is not fit for use among the general population. A clear two-factor, positive-negative structure became apparent which strongly differed from the original validation. These two-factors also did not correlate with each other which means that both measure different constructs. When used in its current form separate scales will have to be made based on the two identified factors, but most importantly efforts should be made to eliminate the positive-negative structure which was found.

10.2 Explaining variations in attitudes towards dementia

The second goal of this thesis was to explain differences in attitudes towards dementia. Intergroup contact theory was taken as a starting point due to this being the main program theory behind the intervention in Park Vossenberg regarding the relationship with the community in Kaatsheuvel. The relationship with the community was central in this thesis, but it should be noted that other program theories are also underlying the intervention in Park Vossenberg. Central is the shift towards a more

holistic form of care, which should lead to a more fulfilling life of the residents in care facility Maasduinen. Increased physical activity of residents is expected to lead to better health-related outcomes (Gallaway, Miyake, Buchowski et al, 2017) and the intervention is expected to lead to higher job satisfaction of employees.

Several hypothesis were formed in this thesis taking the recent literature focused on the local embeddedness of long term care facilities (Van Beek et al, 2013) and literature on dementia attitudes into account. Dementia attitude research is still a developing field, in which relatively little research has yet been done (Piver, Nubukpo, Faure et al, 2013; Hermann et al, 2017), especially in the Netherlands. It must be emphasized that this research is cross-sectional, so there are no effects that are found, only relationships between different factors can be noted.

With the first hypothesis it was expected that knowing a person affected by dementia would be related to more positive attitudes towards dementia. This hypothesis was refuted on all scales. The expected relationship was thus not found in this thesis. This finding is in line with the findings of Crisp, Gelder, Rix, Meltzer and Rowlands (2000) who found that people that know a person affected by a mental illness like dementia were just as likely to hold negative opinions as people that do not know a person affected by dementia. There is however an abundance of literature which states that people that have a personal relationship with a person affected by dementia were more likely to have pro-social attitudes towards dementia and other mental illnesses (Phillipson et al, 2015; Hermann et al, 2017; Corrigan et al, 2001; O'Connor and McFadden, 2010). This hypothesis should be tested again in a larger sample, this could perhaps lead to different results.

The second hypothesis was not tested in this thesis but is interesting for future research. The notion of public familiarity is part of the intervention in Park Vossenberg, and the development of research tools like the DAS is important for the evaluation of these kind of policy interventions. The evaluation of this hypothesis however is more fit for a longitudinal research, in which attitude change can be measured one's Park Vossenberg is finished. Longitudinal research on policy interventions among medical students aimed at changing attitudes towards (George et al, 2014; George et al, 2012) has shown that attitudes can be altered by making medical students more familiar with people with dementia outside a work related context. This shows that a causal relationship can exist between an intervention and one's attitudes towards dementia. The broader research project this thesis is a part of will aim to do so.

The third hypothesis looked at whether the amount of contact one has with his/her relative has an effect on one's attitudes towards dementia. This hypothesis was also only confirmed on the negative factor scale and thus seems in line with the expectations based on contact theory developed by Pettigrew (1998). Frequent contact with a person with dementia does seem to have a positive relationship with one's attitudes towards dementia. Frequent contact with people with dementia had already been shown to have a relationship with more positive attitudes among medical students (Zimmerman, Williams, Reed, Boustani, Preisser, Heck & Sloane, 2005), but it now seems that this

relationship also could potentially exist for people from the general population.

The fourth hypothesis focused on whether the closeness of the relationship one has with a person affected by dementia has a relationship with one's attitudes towards dementia. No significant relationships with positive attitudes were found for this hypothesis. Angermeyer et al (2004) and Corrigan et al (2001) did find a close relationship to be related to more tolerance and less social distance. They however did not study dementia in specific, so it could be that the relationship is different for different diseases. Further research should be done to investigate the mechanism behind the closeness of one's relationship and one's attitudes towards dementia.

The fifth hypothesis and final hypothesis that was tested stated that people that know a person that works with people affected by dementia, will have more positive attitudes towards dementia. This hypothesis was refuted on the complete scale and on the positive factor, but again confirmed on the negative factor subscale. This is in line with the expectations which were made based on the finding by Van Beek et al (2013) which indicates that the assumed information exchange that takes place between care workers and their personal acquaintances can have a relationship with the attitudes of their acquaintances. Van Beek et al (2013) did not know whether a transfer of knowledge or the earlier described reputation effect was behind the mechanism of boundary crossing ties in their research. These findings indicate that information exchange could potentially exist. Further research on the embeddedness of care organizations in their communities should focus more on this relationship, since this relationship shows that medical professionals and caregivers can potentially play a role in affecting attitudes towards dementia. This is however a cross-sectional research so definitive conclusions on this relationships that are discussed cannot be drawn. It could also be the case that participants that filled in that they knew someone that works in dementia care, worked in dementia care themselves and there for had more positive attitudes towards dementia. Due to restrictions this question could not be added in the survey. Experimental research could give more insight with respect to causal relationships.

Significant results were only found on the negative factor subscale. This is important to note since analysis showed that, even though the effects were not significant, effects on both the complete scale as well as the first factor subscale went in another direction then the significant effect. This was the case on the third, fourth and fifth hypothesis. Further research with the DAS should be done to find out to what extend the valence of items had to do with these results. For now the difference in direction of the effects is difficult to explain. It could be argued that the items with a negative valence perhaps elicit a more extreme reaction, which could explain the significant results being found on this factor. These items sound more negative towards people with dementia, and thus could there for elicit a rather extreme reaction of people that have very positive attitudes towards dementia which is reflected in the scores.

Coso and Mavrinac (2016) did not do any analysis with both factors, so no information exists on whether the relationships they studied also differed per factor. Kamoen, Holleman and Van Den

Bergh (2007) found in a meta-analysis on the effect of valences of questions among the Dutch population that valence in text evaluation research often mattered more than the content of the item which was observed. It could thus be argued that the pure valence of the question had a big effect on the answer that was given, also in the Dutch context.

Bivariate relationships were also studied in this thesis. The results of these analyses seemed to indicate that age, sex and education play no role with regard to one's attitudes towards dementia. These findings go against the research which has been done on these factors (Hermann et al, 2017; Phillipson et al, 2012). Especially age has been shown to generally be related to more positive attitudes towards dementia, since older people are expected to know more people affected by dementia. Further research needs to be done to get a better understanding of the relationship between these factors and attitudes towards dementia.

Several limitations in the analysis of explaining variances in attitudes towards dementia have to be noted. Again the sample was relatively small, especially in the analysis of the third and fourth hypothesis. This was somewhat mediated by setting the alpha high at .10, but further research on explaining variances in attitudes towards dementia should aim at doing so with a larger sample. Due to time restrictions the same sample was used for part 2 of this thesis as for part 1. Furthermore not all hypothesis that were formulated could be tested. As noted earlier the effect of public familiarity, which is one of the program theories underlying the intervention in Park Vossenberg is very interesting for further research. The notion of public familiarity if proven successful can be very interesting for future policy initiatives of (long-term) care facilities due to its focus on the embeddedness of care facilities in the residential area they are part of. Further research on this topic will be part of the bigger research project this thesis is a part of. The other hypothesis which has not yet been tested related to the frequency of contact one has with a person that works with people with dementia is also interesting for further research. The research project in Park Vossenberg is very fitting for this, since it can be able to provide more insight into the relationship which was found in this thesis between knowing a person that works with people with dementia, and one's attitudes towards dementia.

Chapter 11: Policy advice

The findings of this thesis are promising for the intervention in Park Vossenberg which is very much aimed at bringing people into contact with people affected by dementia, and could thus serve as an example for other long-term care facilities. Based on the relationships that were found in this thesis it seems like knowing a person with dementia is not necessarily related to the attitudes one has towards dementia, but people that had frequent contact with their personal acquaintance did score higher on attitude scores. Again, it should be noted that this research is cross-sectional so no statements can be made on causal relationships. Longitudinal research that has been done however on interventions aimed at addressing dementia attitudes have been successful (George et al, 2014; George et al, 2012), Policy interventions like Park Vossenberg can hit two birds with one stone: it can give people living in these facilities more freedom and a more fulfilling life, while at the same time potentially altering attitudes that people have towards dementia. This is especially important because of the expected growing prevalence of dementia in society (Alzheimer Nederland, 2018) and the negative consequences that are associated with being stigmatized (Kitwood, 1997; Gilleard & Higgs, 2010). Phillipson et al (2015) also noted that efforts to encourage people to seek help for dementia should address the negative labeling associated with dementia, and a public confidence needs to be built with regard to the capacity of health and workforce sector to ethically and appropriately support people with dementia. The developments in dementia care towards a more holistic approach towards dementia can be helpful in manifesting such an increase in trust. Park Vossenberg is an open care facility, and giving people from the surrounding areas more insight in the care that is provided seems to be in line with the wish to manifest more trust in dementia care. Due to this research being cross-sectional, no real recommendations can be given with regard to policies that have to be implemented. Suggestions can however be given as to what factors might be helpful in addressing negative attitudes towards dementia, partly based on earlier research.

Based on the findings of this thesis knowing a person with dementia is not necessarily related to positive attitudes, but that having frequent interaction with a person affected by dementia can be related to positive attitudes towards dementia. Corrigan et al (2001) found a causal relationship for this effect, so it could be argued that the findings of this thesis fall in line with their findings. Corrigan et al (2001) note that in order for familiarity to have a chance to lead to liking, opportunities for interaction have to be created. One of the ideas behind the creation of Park Vossenberg is that people will change their view on dementia because they see patients with dementia in another setting. A similar type of intervention has been shown to be successful in positively changing attitudes of medical students towards dementia, by having geriatric experiences, such as home visits, outside a hospital environment (George et al, 2014). It could be that care facilities can for instance organize weekly events at different informal locations aimed at bringing the people living there into repeated contact with people from the local community in an informal environment, a café for example. Municipalities can also play a role in facilitating these kinds of interactions by investing in projects like Park Vossenberg. Especially given

that people with negative attitudes towards people with dementia are less likely to want to provide care for people with dementia (Phillipson et al, 2015; Kinney et al, 2017). Municipalities have been responsible for the care that is provided in their municipality since 2015, and there will be an increasing reliance on informal care in the coming years (Rijksoverheid, 2017; Maarse & Jeurissen, 2016). Changing negative attitudes towards mental illnesses like dementia could help in responding to this growing demand in the coming years, and encouraging contact between the local community and the care facility could be an interesting and rewarding way to do so, also because of the positive effects which have been found by Van Beek et al (2013) for both caregivers as well as clients as a result of the local embeddedness of the staff and the care organization. This recommendation can be summarized as followed:

Care facilities should put effort into facilitating contact between their residents and the local community

Another policy recommendation that can be suggested based on the findings of this research is that programs that are aimed at altering attitudes should not try to focus on one specific group when addressing attitudes. The results of the covariate analyses in this thesis show that groups based on age, education and gender did not significantly differ in attitude scores. There is enough 'to gain' for each of the groups that were identified in this thesis with regard to their attitudes toward people with dementia. Organizations like 'Nederland Dementievriendelijk' already seem to try and attract a broad audience by doing tv-commercials, and this is a trend which should be continued.

Programs aimed at dementia attitude change should not focus on one specific group

One final additional point has to be made in addition to the previous recommendation. Organizations that evaluate their Dementia attitude policy interventions should pay strong attention to which measure is used, and for which group of people the specific measure is validated. Not doing so could to skewed results and thus harm the process of policy improvement or adjustment.

Organizations that want to evaluate policy interventions focused on dementia attitude change should pay strong attention to the measure that is used

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Appendix 1: Principal component analysis with Oblimin rotation

Appendix 1.1: Principal component analysis with Oblimin rotation with 3 factors

	Factor 1	**Factor 2**	**Factor 3**
N. Mensen met dementie voelen het wanneer andere mensen aardig tegen hen zijn	.819		
M. Mensen met dementie kunnen genieten van het leven	.814		
K. Je kunt genieten van omgaan met mensen met dementie	.727		
Q. Ik heb er bewondering voor hoe mensen met dementie zich weten te redden	.709		
B. Mensen met dementie kunnen creatief zijn	.706		
R. We kunnen tegenwoordig veel doen om de kwaliteit van leven van iemand met dementie te verbeteren	.698		
L. Ik voel me ontspannen bij mensen met dementie	.668	.412	
D. Ik heb er geen moeite mee om met mensen met dementie om te gaan	.576	.474	
I. Mensen met dementie hebben graag bekende dingen om zich heen	.552		.480
C. Ik voel me zelfverzekerd bij mensen met dementie	.534		.
S. Moeilijk gedrag kan een manier van communiceren zijn voor mensen met dementie	.484		
P. Ik kan me niet voorstellen hoe het is om te zorgen voor iemand met dementie		.813	
O. Ik voel me hulpeloos omdat ik niet weet hoe ik mensen met dementie kan helpen		.774	
G. Ik ben niet erg bekend met dementie		.732	
A, Ik ben bang voor mensen met dementie		.617	
E. Ik voel me niet prettig in de aanwezigheid van mensen met dementie		.585	
H. Ik zou een opgewonden persoon met dementie vermijden		.556	-.509
J. Het is belangrijk om het verleden van mensen met dementie te kennen	.473		.687
F. Iedere persoon met dementie heeft unieke behoeftes	.500		.636

Appendix x 1.2 Principal component analysis with Oblimin rotation with 1 factor

	Factor 1
N. Mensen met dementie voelen het wanneer andere mensen aardig tegen hen zijn	.789
M. Mensen met dementie kunnen genieten van het leven	.769
K. Je kunt genieten van omgaan met mensen met dementie	.760
L. Ik voel me ontspannen bij mensen met dementie	.758
D. Ik heb er geen moeite mee om met mensen met dementie om te gaan	.716
B. Mensen met dementie kunnen creatief zijn	.677
Q. Ik heb er bewondering voor hoe mensen met dementie zich weten te redden	.652
F. Iedere persoon met dementie heeft unieke behoeftes	.607
I. Mensen met dementie hebben graag bekende dingen om zich heen	.600
J. Het is belangrijk om het verleden van mensen met dementie te kennen	.566
R. We kunnen tegenwoordig veel doen om de kwaliteit van leven van iemand met dementie te verbeteren	.562
C. Ik voel me zelfverzekerd bij mensen met dementie	.544
S. Moeilijk gedrag kan een manier van communiceren zijn voor mensen met dementie	.499
A. Ik ben bang voor mensen met dementie	.387
E. Ik voel me niet prettig in de aanwezigheid van mensen met dementie	.306
H. Ik zou een opgewonden persoon met dementie vermijden	.229
O. Ik voel me hulpeloos omdat ik niet weet hoe ik mensen met dementie kan helpen	.190
P. Ik kan me niet voorstellen hoe het is om te zorgen voor iemand met dementie	.163
G. Ik ben niet erg bekend met dementie	.138

Appendix 2: Versions of the DAS during back-translation procedure

Appendix 2.1 Original DAS :

1. It is rewarding to work with people who have ADRD.
2. I am afraid of people with ADRD.
3. People with ADRD can be creative.
4. I feel confident around people with ADRD.
5. I am comfortable touching people with ADRD.
6. I feel uncomfortable being around people with ADRD.
7. Every person with ADRD has different needs.
8. I am not very familiar with ADRD.
9. I would avoid an agitated person with ADRD.
10. People with ADRD like having familiar things nearby.
11. It is important to know the past history of people with ADRD.
12. It is possible to enjoy interacting with people with ADRD.
13. I feel relaxed around people with ADRD.
14. People with ADRD can enjoy life.
15. People with ADRD can feel when others are kind to them.
16. I feel frustrated because I do not know how to help people with ADRD.
17. I cannot imagine caring for someone with ADRD.
18. I admire the coping skills of people with ADRD.
19. We can do a lot now to improve the lives of people with ADRD.
20. Difficult behaviors may be a form of communication for people with ADRD.

Appendix 2.2 First translation of the DAS

1. Het is bevredigend om met mensen met dementie te werken.
2. Ik ben bang voor mensen met dementie.
3. Mensen met dementie kunnen creatief zijn.
4. Ik voel me zelfverzekerd bij mensen met dementie.
5. Ik heb er geen moeite mee om mensen met dementie aan te raken.
6. Ik voel me niet prettig in de aanwezigheid van mensen met dementie.
7. Iedere persoon met dementie heeft unieke behoeftes.
8. Ik ben niet erg bekend met dementie.
9. Ik zou een opgewonden persoon met dementie vermijden.
10. Mensen met dementie hebben graag bekende dingen om zich heen.
11. Het is belangrijk om het verleden van mensen met dementie te kennen.
12. Je kunt best genieten van omgaan met mensen met dementie.
13. Ik voel me ontspannen bij mensen met dementie.
14. Mensen met dementie kunnen genieten van het leven.
15. Mensen met dementie voelen het wanneer andere mensen aardig tegen hen zijn.
16. Ik voel me hopeloos omdat ik niet weet hoe ik mensen met dementie kan helpen.
17. Ik kan me niet voorstellen hoe is om voor iemand met dementie te zorgen.
18. Ik heb er bewondering voor hoe mensen met dementie zich weten te redden.
19. We kunnen tegenwoordig veel doen om het leven van iemand met dementie te veraangenamen.
20. Moeilijk gedrag kan een manier van communiceren zijn voor mensen met dementie.

Appendix 2.3 Final version of the DAS

1 (A). Ik ben bang voor mensen met dementie

2 (B). Mensen met dementie kunnen creatief zijn

3 (C). Ik voel me zelfverzekerd bij mensen met dementie

4 (D). Ik heb er geen moeite mee om met mensen met dementie om te gaan

5 (E) . Ik voel me niet prettig in de aanwezigheid van mensen met dementie

6 (F). Iedere persoon met dementie heeft unieke behoeftes

7 (G). Ik ben niet erg bekend met dementie

8 (H). Ik zou een opgewonden persoon met dementie vermijden

9 (I). Mensen met dementie hebben graag bekende dingen om zich heen

10 (J). Het is belangrijk om het verleden van mensen met dementie te kennen

11 (K). Je kunt genieten van omgaan met mensen met dementie

12 (L). Ik voel me ontspannen bij mensen met dementie

13 (M). Mensen met dementie kunnen genieten van het leven

14 (N). Mensen met dementie voelen het wanneer andere mensen aardig tegen hen zijn

15 (O). Ik voel me hulpeloos omdat ik niet weet hoe ik mensen met dementie kan helpen

16 (P). Ik kan me niet voorstellen hoe het is om te zorgen voor iemand met dementie

17 (Q). Ik heb er bewondering voor hoe mensen met dementie zich weten te redden

18 (R). We kunnen tegenwoordig veel doen om de kwaliteit van leven van iemand met dementie te verbeteren

19 (S). Moeilijk gedrag kan een manier van communiceren zijn voor mensen met dementie

Appendix 3: Map Kaatsheuvel, streets in which the questionnaire was distributed are marked