

*The relation between alexithymia and the vividness of memories during
the recall of sad memories*

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Bachelor thesis, June 2014

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ABSTRACT

Introduction: Numerous studies have shown that the mere talking about negative experiences has positive effects on physical and mental health. In this context, it is shown that the verbal expression of emotional words plays an important role in order to benefit from the health effects of telling narratives. However, people with a high degree of alexithymia have an impaired ability to express emotional experiences verbally. Thus, people with a high degree of alexithymia would have difficulties to benefit from the health effects of talking about negative experiences. The purpose of this study is to investigate the relation between the degree of alexithymia and the verbal emotional expression during the recall of sad memories. Therefore, the use of negative emotional words and the vividness of sad memories are considered. *Method:* Participants are 35 Dutch students between 18 and 39 years. The participants were asked to recall four categories of memories: sad, angry, happy and neutral memories. The data were recorded with a camera and a voice recorder. In addition, the data were transcribed and then analyzed with the Linguistic inquiry and word count (LIWC). Furthermore, the participants filled in their demographic data and the 20-Item Toronto alexithymia scale (TAS-20). The TAS-20 measures the degree of alexithymia. For the analyses, descriptive, correlation analyses, the Wilcoxon-test and Univariate ANOVA repeated measures were executed. *Results:* The findings indicate no difference between both sad memories. Differences were found between the numbers of negative words in sad memories and neutral memories. No significant correlations could be found between the degree of alexithymia, the number of negative emotional words and the vividness of sad memories. *Discussion:* Differences in study findings can be possibly explained through a difference in procedure, sample characteristics and investigated variables. With respect to the findings that no statistically significant relations were found between the degree of alexithymia and the vividness of sad memories, an explanation can be found in the intensity of memories. It is shown that the intensity determines the vividness of the memory. Moreover, no statistically significant relation could be found between the degree of alexithymia and the number of negative emotional words in sad memories. A possible explanation can be found in the difference of procedures between the current study and other studies. Recommendations for further studies include the investigations of intensity in place of vividness. Furthermore, the people who transcribed the data should speak the same native language such the participants. In addition, a sample with participants with a higher degree of alexithymia should be used in order to get more significant results. Moreover, the non-verbal aspect of emotional expression related to the degree of alexithymia should be considered in further studies. For the practice of psychotherapy, further research should investigate how the promotion of emotional word use can foster the ability of emotional processing for people with a high degree of alexithymia.

SAMENVATTING

Inleiding: Taalrijke onderzoeken hebben aangetoond dat het vertellen van negatieve ervaringen positieve effecten heeft op de fysieke en de mentale gezondheid. Daarbij speelt de verbale expressie van emotionele woorden een belangrijke rol. Echter hebben mensen met een hoge mate van alexithymie een verminderd vermogen emotionele ervaringen verbaal tot uiting te kunnen brengen. Daardoor kunnen deze mensen niet van de positieve effecten van het vertellen van negatieve herinneringen profiteren. Het doel van deze studie is te onderzoeken in hoeverre de mate van alexithymie samenhangt met de verbale expressie van emotionele woorden tijdens het ophalen van verdrietige herinneringen. *Methode:* De proefpersonen waren studenten tussen 18 en 39 jaren. Ze kregen de opdracht vier herinneringen op te halen, namelijk verdrietige, boze, vrolijke en neutrale herinneringen. De gegevens werden opgenomen met behulp van een camera en een spraak recorder. De gegevens werden getranscribeerd en met de Linguistic inquiry and word count (LIWC) geanalyseerd. Bovendien hebben de proefpersonen hun demografische gegevens en de 20-Item Toronto alexithymia scale (TAS-20) ingevuld. De TAS-20 meet de mate van alexithymie. Voor de analyse van de gegevens zijn er beschrijvende analyses, correlatie analyses, een Wilcoxon-toets en een Univariate ANOVA voor herhaalde metingen uitgevoerd. *Resultaten:* De resultaten tonen aan dat er geen verschillen zijn tussen beide verdrietige herinneringen. Er zijn significante verschillen gevonden tussen het aantal negatieve woorden en neutrale herinneringen. Er zijn geen significante correlaties gevonden tussen de mate van alexithymie, het aantal emotiewoorden en de levendigheid van de verdrietige herinneringen. *Discussie:* De verschillen tussen de resultaten van deze studie en andere studies kunnen mogelijk verklaard worden door het verschil in de opzet van de studie, de karakteristiek van de steekproef, en de variabelen die in deze studie onderzocht werden. Met betrekking tot het resultaat dat er geen significante relaties gevonden werden tussen de mate van alexithymie en de levendigheid van verdrietige herinneringen, zou een mogelijke verklaring betrekking kunnen hebben op de intensiteit van de herinneringen. Het wordt aangetoond dat de intensiteit invloed heeft op de mate van levendigheid. Aanbevelingen voor verder onderzoek zijn, in plaats van de levendigheid, de intensiteit van emoties te gaan onderzoeken. Bovendien zouden de personen die de gegevens transcriberen dezelfde moedertaal hebben zoals de proefpersonen zelf. Verder zou een steekproef met een hogere mate van alexithymie significantere resultaten voortbrengen. Daarenboven zouden toekomstige studies het non-verbale aspect van emotionele expressie met betrekking tot de mate van alexithymia kunnen onderzoeken. Voor de psychotherapeutische praktijk zou het interessant zijn in hoeverre het bevorderen van emotioneel woordgebruik het vermogen tot emotionele verwerking bij mensen met een hogere mate van alexithymie kan verbeteren.

INTRODUCTION

Narratives in their many guises, such as folktales, legends, myths, epics, histories, pantomimes and even in the evening news, have appeared in every known human culture for thousands of years. Only since the last few decades psychological researchers have begun to investigate storytelling in a systematic and critical way (McAdams, 2006). A narrative psychology of human lives has been developed. Thus, storytelling emerges to be a fundamental way to express ourselves and our world to others (McAdams, 2009).

In the course of this development, numerous studies show that telling narratives, especially after the experience of negative events, has a positive effect on physical and mental health (Pennebaker & Seagel, 1999; Thomsen, 2013; Crossley, 2000a; Truong et al., 2013). Considering the health effects of telling narratives, the approach of narrative psychology becomes more and more important in the field of psychotherapy (Gonçalves & Stiles, 2011). Nonetheless, it is shown that patients who are considered to be alexithymic could not benefit from the health effects of telling narratives because of their impaired ability to describe emotions (Grabe et al., 2008).

Considering the health implication for alexithymic patients and their impaired ability to express emotions verbally, this study investigates the relation between the word use and the degree of alexithymia during the recall of sad memories.

Narrative Psychology

Narrative psychology deals with the study of language, stories and narratives (Crossley, 2000b). Narratives appear in form of personal and social histories, myths, fairy tales, novels and the everyday stories in our lives (Polkinghorne, 1988). In the sense of narrative psychology, narratives are seen as life stories which involve “an internalized and evolving narrative of the self that integrates the reconstructed past, perceived present and anticipated future [...]” (McAdams, 2009; p.10). Through telling life stories we give meaning to the person who we are and who we will become in the future (Thomsen et al., 2013). Therefore, in narrative psychology, life stories play an important role in our identity-forming and influence future behavior and the outcomes that we expect in the future (Thomsen, Olesen, Schnieber & Tønnesvang, 2013; Crossley 2000a).

The main purpose of a narrative psychology advocates the need to focus to the human life in the way it is lived, experienced and interpreted by each individual (Crossley, 2000b). It implicates that human experience and behavior is meaningful (Crossley, 2000a). Every experience is made meaningful through interpreting and structuring these experiences in personal narratives, also termed as life stories. Furthermore, the implications and permutations of those narratives as well for the individual self as for the society are considered (Crossley, 2000b). Thus, the approach of narrative psychology has been developed

in relation to the issue of traumatizing events. It investigates the way in which people adapt and respond to these traumatic events (Crossley, 2000b). However, those negative experiences of traumatic events can disrupt the coherence of people's narratives and could shatter the sense that people give to their lives (Crossley, 2000a).

Considering the impact of negative experiences numerous studies reveal that constructing stories, especially after traumatic events, have a positive effect on physical and mental health (Pennebaker & Seagal, 1999; Thomsen, 2013; Crossley, 2000a; Truong et al., 2013). According to Pennebaker & Seagal (1999), by telling life stories people can organize and remember experiences in a coherent fashion while integrating thoughts and feelings. Thus, people can 'repair' their stories by mere talking about their experiences. Moreover, they can understand their experiences and themselves in a more coherent manner which gives them a sense of control and predictability (Pennebaker & Seagal, 1999). Furthermore, studies show that the approach of telling narratives in form of verbal emotional expressions has a positive effect on the well-being (Thomsen et al., 2013; Pennebaker & Seagal, 1999). Nevertheless, Pennebaker & Seagal (1999) also show that painful experiences that are not structured in a narrative form can result in a continued experience of negative emotions (Pennebaker & Seagal, 1999). Consequently, individuals who do not express their negative experiences verbally would suffer from more emotional distress. A difficulty in the verbal expression of emotional states can be found in the mental disorder called alexithymia (Salovey & Mayer, 1990). Concerning the implications of alexithymia with respect to the health effects of narrative therapy, the relation between the construct of alexithymia and the verbal expression of emotional states is considered in this study.

Alexithymia

Alexithymia, often defined as the absence of words for feelings (Aleman, 2005; Parker, Prkachin & Prkachin, 2005; Czernecka & Szymura, 2008), refers to people who are unable to appraise and verbally express their emotions (Salovey & Mayer, 1990). It is considered as a multifaceted personality trait with stability in time and degree (Czernecka & Szymura, 2008). The prevalence of alexithymia shows a high rate up to 10% in the general population (Mantani et al., 2005; Aleman, 2005). Furthermore, alexithymia shows a high prevalence in various psychiatric disorders, such as somatoform disorders (53 %) and anxiety disorders (46, 7 %). With respect to the high prevalence of alexithymia reported in various psychiatric disorders, alexithymia represents a major risk factor for a range of medical and psychiatric problems (Mantani et al., 2005; Aleman, 2005).

The salient features of alexithymia comprise a multidimensional construct indicated through (1) difficulties in identifying and describing feelings to other people, (2) a constricted imagination process (Taylor, Bagby & Parker, 2000), and (3) an externally-oriented thinking

style. The difficulty in identifying feelings relates to the awareness of internal sensations, such as emotional states in consequence of positive or negative experiences. In other words, individuals with a high degree of alexithymia are not in a state to identify their internal emotional state after emotional experiences, such as the feeling of sadness after a sad experience. The second salient feature of alexithymia involves the difficulty of describing feelings (Parker, Prkachin & Prkachin, 2005). Therefore, individuals with a high degree of alexithymia are less able to put their internal emotional states into words and to communicate their emotional states to others.

A further important feature of alexithymia describes a constricted imagination process. It is shown that a restricted imagination capacity for individuals with a high degree of alexithymia limits the extent to which these individuals can deal with anxiety and other emotions (Mantani et al., 2005). The restricted capacity for imagination is also found in the vividness of emotional experiences. People with a high degree of alexithymia show difficulties in the affective use of language (Mantani et al., 2005). Thus, they have difficulties to describe emotional experiences in an accurate manner. Another feature of alexithymia refers to an externally-oriented thinking style characterized by the preference for attending to the extrapersonal world of events, thus events beyond the intrapersonal world of thoughts and feelings inside (Parker, Prkachin & Prkachin, 2005).

Alexithymia and Verbal Emotional Expression

Relating to the health effects of telling narratives the expression of emotional experiences plays an important role (Pennebaker & Seagel, 1999). Emotional expressions describe the way people utter their emotions in a positive or negative way. These emotions can be expressed verbally as well as non-verbally (Scherer & Ceshi, 2000). Verbal emotional expressions are words which could either be positive or negative. Positive emotional words involve words, such as happy or laugh. In contrast, negative-emotional words are related to words, such as sad and angry (Pennebaker & Seagel, 1999). Pennebaker & Seagel (1997) show that both talking and writing about emotional experiences have positive effects on health. In addition, they show that most studies confirmed the positive effect of disclosure for physical health. Thus, the disclosure of emotional words implicates a central role with respect to the positive effect on health. Furthermore, Bohanek Fivush and Walker (2004) revealed that negative narratives contain more negative emotion words than positive narratives and vice versa. However, Lane et al. (1996) show a decreased verbal ability to express emotional words by people with a high degree of alexithymia. Thus, people with a high degree of alexithymia use less emotional words than people with no degree of alexithymia. Furthermore, Wagner and Lee (2007) show significant inverse correlations between the verbal expression of negative emotions and the degree of alexithymia in their study. Thus, the higher

the degree of alexithymia the lower was the verbal expression of negative emotions. In order to investigate the role of alexithymia, this study investigates the relation between the negative emotional word use and the degree of alexithymia. With respect to the relation between the negative emotional word use and the degree of alexithymia, Wagner and Lee (2007) show an inverse relation between the verbal expression of negative emotions and the factor of externally-oriented thinking. However, with regard to the other factors of alexithymia (the difficulty describing feelings and the difficulty identifying feelings) they only found relations regarding to facial expressions.

Another aspect that plays an important role with respect to alexithymia and the verbal expression of emotional words comprises vividness. Mantani et al. (2005) show that subjects with a high degree of alexithymia rated imaginations significantly less vivid than subjects with no degree of alexithymia. This confirms the results from Camposa, Chivab and Moreau (1999) who revealed that alexithymic subjects showed a lower imaging capacity than non-alexithymic subjects regarding to the vividness of negative memories. Furthermore, a recent study from Vanheule (2010) found a relation between the degree of alexithymia and the vividness of emotions. In order to investigate the relation between alexithymia and the use of negative emotional words the aspect of vividness will be also considered in this study.

Narrative Psychotherapy and alexithymia

Narratives form an important part in relation to the practice of psychotherapy. In therapy, clients can display the meaning of their lives through telling personal narratives and retell this to the therapist (Gonçalves & Stiles, 2011). In the narrative approach, psychotherapy is seen as a process of 'story-repair' (Avdi & Georgaca, 2007). Situations are reflected where one's self-narratives do not sufficiently represent vital aspects of lived experiences. These problematic narratives will be reconstructed in order to become more coherent. In this sense, disclosure is the core aspect of therapy (Pennebaker, 1999). However, disclosure involves not only verbal forms of expressions but also involves statements such as thoughts and wishes (Grabe et al., 2008).

However, people with alexithymia would not profit from disclosure because of their less ability to imagine and describe emotional states. In relation to alexithymia, Rief, Heuser & Fichter (1996) found out that alexithymia correlates positively with the use of negative words. In contrast, alexithymia correlated negatively with the use of positive words. Furthermore, people with a high degree of alexithymia would have difficulties in telling narratives, especially in narratives about emotional experiences. In this context, Grabe et al. (2008) describe three problems that individuals with alexithymia can have in the psychotherapeutic process. First, individuals with alexithymia often show a socially avoidant attitude, are cold and less emotionally attached to others. This avoidance of interpersonal

contact could lead to a reduced adherence of the therapy. Second, the lack of imagination and the awareness to emotional cues could have consequences in the ability to successfully engage in psychotherapy. Thus, alexithymia patients respond poorly to dynamic psychotherapy. These findings indicate that alexithymia can have a significant impact on the effectiveness of outcomes in psychotherapy.

This study investigates the relation between the number of negative emotional word use and the degree of alexithymia. These findings could give new indications for developing methods regarding to the treatment of people with a high degree of alexithymia. Therefore, investigations are needed to study the narrative process of people with a high degree of alexithymia. This study will investigate this relation based on a student sample. Through this investigation, recommendations can be given for further research in order to get a better understanding of the alexithymic disorder. Thereby, better methods for psychotherapists can be developed.

The main purpose of this study and research question

Relating to the negative influence on psychotherapy that alexithymia can have, this study will focus on the relationship between alexithymia and the use of negative words in sad memories. To examine the goal of this study the following research question is developed:

How is the degree of alexithymia related to the verbal emotional expression during the recall of sad memories?

In order to investigate this relation, a correlational study will be executed. Further, the following subquestions and hypotheses are developed.

1. *How does the number of negative emotional words differ between sad and neutral memories?*

Hypothesis: In general, people use more negative emotional words in sad memories than in neutral memories.

Based on the findings it can be expected that the number of negative emotional words show a higher rate in sad memories than in neutral memories.

2. *How is the number of negative emotional words related to the vividness of sad memories?*

Hypothesis: There is a significant correlation between the number of negative emotional words and the vividness of sad memories.

Based on the findings it can be expected that the number of negative emotional words and the vividness of sad memories are positively statistically significantly correlated.

3. *How is the degree of alexithymia related to the number of negative emotional words during the recall of sad memories?*

Hypothesis: There is a significant correlation between the degree of alexithymia and the number of negative emotional words.

Based on the findings it can be expected that people with a higher degree of alexithymia use less negative emotional words during the recall of sad memories than during the recall of neutral memories. Furthermore, based on the findings it can be expected that a negative correlation can be found between the number of negative emotional words and factor of externally-oriented thinking style (EOT).

4. *How is the degree of alexithymia related to the vividness during the recall of sad memories?*

Hypothesis: There is a significant correlation between the degree of alexithymia and the vividness of sad memories.

Based on the findings it can be expected that the degree of alexithymia and the vividness of sad memories are negatively statistically significantly correlated.

METHOD

Participants

The sample consisted of 35 Dutch students from the University of Twente (20 men and 15 women). The data collection was approved through the ethic commission at the University of Twente. The minimum age required for the participants was 18 years. In total, participants between 18 and 39 years have participated. The mean age was 23.40 years (SD = 3.9). In addition, the participants had to be native Dutch speakers. The demographic data is arranged in Table 1. The balance between males and females was equivalent, with 15 women (42.9%) and 20 men (57.1%). The students named 17 different fields of study. In total, 48.6 % stated that they study behavioral science, and 51.4 % stated that they do another field of study. The participants were invited to take part in this study through an advertisement as well as through Sona Systems. In most psychology courses, students must participate in experimental studies as a part of their study. Sona Systems is an online system for managing participation in experiments. There, students can get credits by participating in research studies. The data from all participants (N= 35) could be used.

Table 1. *Demographic data of the participants (N = 35)*

Demographic data	N	%
Mean age	23.40 (SD = 3.9)	-
Gender		
Male	20	57.1
Female	15	42.9
Field of study		
Behavioral science	17	48.6
Bachelor	17	48.6
Master	-	-
Others	18	51.4
Bachelor	11	31.4
Master	7	20.0

Procedure

After the participants arrived in the lab, they were welcomed and asked to sign an informed consent. This form explained the purpose, the duration and the procedure of this study. It stated that this experiment is executed in order to get insight in the process of how memories are recalled and that the experiment will last about 60 minutes. It further elucidated the participants about their rights in this study. It indicated that this experiment is completely voluntary and that the participants can stop the experiment at any time. It also stated that the data of the participants will be handled anonymously and that they will be debriefed about the real intention of this study at the end of the experiment. In addition, the form informed the participants about the data that will be collected in this experiment. The participants have to talk about happy, sad, angry and neutral memories. Furthermore, they were asked to fill in their demographic data and the following three questionnaires: The NEO Five Factor Inventory (NEO-FFI), which measures personality, the Reminiscence Functions Scale (RFS), which measures how people circumvent with memories, and the 20-Item Toronto alexithymia scale (TAS-20), which measures the degree of alexithymia. The NEO-FFI and the RFS were not relevant for this study. After signing up the informed consent, the participants got the general instructions for the experiment through the researcher. Then, the camera and the voice recorder were started. The study persisted of two parts. In the first part of the experiment, the participants were asked to recall three categories of personal memories. These were memories where the participant felt sad, memories where the participants felt angry, and memories

where the participant felt happy. In total, each category of narration was told twice times. Thereby, the participants always got a cue-word before the recall of the next memory started in order to let the participant know about which memory they have to tell about (e.g. ‘sad’ or ‘happy’).

Before the experiment started the participants exercised the narration of personal memories with a calm memory two times in the presence of the examiner. Thereby, the participants recalled a memory that is at least one year old. After telling the memory, the participants evaluated the told memory on the computer. They were asked to name a title for the memory and to state the date when the memory occurred. After that, the participants evaluated the memory on a six point rating scale. Thereby, the participants were asked to evaluate each memory in categories of alive, important, sad, happy, and calm. After finishing talking about the memories, the examiner asked the participants whether they have any questions. In the case of negation, the examiner left the room and the participant followed further instructions on the computer screen. The experiment started with the recall of sad memories. The participants narrated the first sad memory and then evaluated this memory on the computer. Each memory was evaluated in the same pattern such as described in the exercise condition. In addition, the participants were asked to tell about three neutral memories. The first neutral memory was asked after the exercise of calm memories. At that point, the participants were asked to describe the way they took to get to this study. The second neutral memory was scheduled after the recall of the second sad memory. There, the participants were asked to describe the furniture in their living rooms. Finally, the third neutral memory took place after the recall of the second angry memory. There, the participants were asked to describe the furniture in their kitchens.

In the second part of the experiment the participants filled in their demographic dates and the TAS-20, the NEO-FFI and the RFS on the computer. After the participants had finished, they were enlightened about the real intention of this study if they desired to know.

Materials

The memories of the participants were recorded by using a voice tracer that was positioned on the desk next to the computer. Furthermore, a camera was used which was positioned in front of the participant. However, the film recordings are not used for the current study. The narratives were transcribed and then analyzed with the Dutch translation of the Linguistic inquiry and word count (LIWC) in order to determine the type and the number of used words. In order to measure the degree of Alexithymia the Dutch version of the 20-Item Toronto alexithymia scale (TAS-20) was used. The questionnaires and further instructions for the participants were executed with the online survey program Qualtrics in front of a personal computer.

20-Item Toronto alexithymia scale (TAS-20)

The TAS-20 is a widely used self-report measure of alexithymia (Parker, Taylor & Bagby, 2001). It involves 20 items on a five-point Likert rating format from 1 (strongly disagree) to 5 (strongly agree). Five items are negatively keyed. The TAS-20 consists of the three following factors: 1) difficulty identifying feelings (DIF), 2) difficulty describing feelings (DDF), and 3) externally-oriented thinking (EOT) (Parker, Taylor & Bagby, 2001). Parker, Taylor, Bagby (2003) showed a strong validity for the English version of the TAS-20 ($\alpha = .86$) and for its three factors ($\alpha > .70$). The scoring method used for the TAS-20 is the summation of all scores from each item. In the study from Parker, Taylor & Bagby (2001) the mean scores of the three factors were 14.38 (M) for the factor difficulty identifying feelings, 12.5 (M) for the factor difficulty describing feelings, and 18.7 for the factor externally-oriented thinking. The mean score of the total TAS-20 was 45.57 (M).

The present study used the Dutch translation of the TAS-20. Taylor, Bagby & Parker (2003) showed a strong validity for the Dutch translation of the TAS-20. The internal consistency for the three factors was .79 (α) for DIF, .78 (α) for DDF, and .60 (α) for EOT. The total TAS-20 showed an internal consistency of .79 (α). A reliability analysis of this study confirmed the validity of the TAS-20. In this study, the internal consistency for the total TAS-20 showed a value of .75 (α). The internal consistency for the three factors was .78 (α) for the factor DDF, .76 (α) for the factor DIF, and .67 (α) for the factor EOT.

Linguistic inquiry and word count (LIWC)

The LIWC is a computerized text analysis program that categorizes and counts word use (Kahn, Tobin, Massey & Anderson, 2014). The program counts the frequency of words used from a given category. These categories contain articles and prepositions, emotional, cognitive and sensory words, words relating to time and space, and words relating to areas such as school and work (Kahn et al., 2014). The LIWC groups emotion words into positively and negatively toned categories (Kahn, Tobin, Massey & Anderson, 2014). These categories are ordered in a hierarchical way. At the highest level is the total number of affect words. This level includes all emotional words with both pleasant and unpleasant connotation (e.g. happy, bitter). The next level contains the positive and negative emotional words. The category for negative words reflects negative feelings and negatively toned words (e.g. hate, enemy). The LIWC gives the total percentage of words used in every given category (Zijlstra, Middendorp, Meerveld & Geenen, 2005). In the current study, only the category of negative emotional words was used. Thereby, the mean of the total number of negative emotional word use of both sad memories was used.

Kahn et al. (2007) demonstrated a strong validity for the English version of the LIWC. They showed significant associations between experiences of sadness and amusement

with the oral expression of these emotions as measured by the LIWC ($p < 0.001$). This study used the Dutch version of the LIWC. Zilstra et al., 2005 demonstrated a high internal consistency of $> .70$ (α) for the Dutch Version of the LIWC.

The internal consistency for the category negative emotional words of the present study showed a strong value of $.78$ (α).

Analysis

For the analysis the program Statistical Program for Social Sciences (SPSS) version 22.0 was used. The distribution of normality of the data was examined with the Shapiro-Wilk test (Shapiro & Wilk, 1995). In terms of the Shapiro-Wilk test, it can be assumed that the sample and the scores of the TAS-20 were approximately normal distributed. Further, the numbers of negative emotional words for both sad memories are not normal distributed. Finally, the degree of vividness is not normal distributed. Furthermore, no outliers were found. Moreover, a reliability analysis for the TAS-20 and for the category negative emotional words of the LIWC was executed.

The following analyses were executed in order to investigate the research question. Firstly, the means, range and standard deviations of the variables degree of alexithymia and its three factors, the vividness of sad memories, the degree of sadness for the sad memories, the total number of negative emotional words of both sad memories, the apart number of negative emotional words in the first and in the second sad memory, and the number of negative emotional words during the recall of neutral memories were determined. The descriptive for the degree of sad memories were considered in order to ensure that the recalled memories are true sad memories. Thereby, a high mean of the overall ratings would indicate a high value of sadness for both sad memories. Secondly, to ensure that the number of negative emotional words does not significantly differ between both sad memories, a Wilcoxon test was executed. Because of the non-parametric characteristics of both variables (number of negative words in the first sad memory and in the second sad memory) a Wilcoxon test was chosen. Thirdly, to investigate the difference between the number of negative words in sad memories and the number of negative words in neutral memories an Univariate ANOVA repeated measures was executed. As within subject factors two variables were chosen: The total number of negative words from both sad memories and the total number of negative words from all neutral memories. In addition, in order to examine more precisely the difference between the number of negative words in sad memories and neutral memories confidence intervals were executed.

Furthermore, the relation between the degree of alexithymia and its three factors, the vividness of sad memories and the number of negative emotional words during the recall of sad memories were examined with the Pearson correlation coefficient. Therefore, nine

correlation analyses were executed. Firstly, the total scores from the TAS-20 were correlated with the total number of negative emotional words which were used during the recall of sad memories. Secondly, the correlation between the total scores from the TAS-20 and the scores from the vividness of sad memories was examined. Thirdly, the correlation between the three factors of the TAS-20 (DDF, DIF, EOT) were correlated with the total number of negative words from both sad memories and with the total degree of vividness rated in both sad memories. Lastly, the correlation between the scores for the degree of vividness of sad memories and the total number of negative emotional words was investigated.

Additionally, in order to investigate the difference between the alexithymia regarding to the number of negative words, the number of negative words in neutral memories was considered as control condition.

RESULTS

Table 2 shows means (M) and standard deviations (SD) for the total score of the Toronto Alexithymia Scale-20 (TAS-20) and its three factors, the number of negative emotional words in sad memories, the number of negative emotional words in neutral memories, and the scores for the degree of vividness of sad memories. The total mean score of the TAS-20 ranges from 31 to 66 ($M = 48.03$, $SD = 8.78$). Further, the mean scores of the three factors of the TAS-20 show a ranges from 7 to 21 ($M = 13.49$, $SD = 4.42$) for the factor difficulty describing feelings (DDF), from 9 to 26 ($M = 14.97$, $SD = 4.37$) for the factor difficulty identifying feelings (DIF), and from 10 to 29 ($M = 19.29$, $SD = 4.22$) for the factor externally-oriented thinking (EOT). The total number of negative words in both sad memories ranges from 3 to 48 ($M = 15.00$, $SD = 9.35$). In addition, the number of words in the sad memories apart ranges from 1 to 24 ($M = 7.11$, $SD = 4.33$) for the first memory and from 0 to 24 ($M = 7.89$, $SD = 5.90$) for the second memory. The mean scores for the total number of negative emotional words in the neutral memories illustrates a range from 2.5 to 6 ($M = 2.06$, $SD = 0.97$). The total mean score for the ratings of the degree of sadness ranges from 1.5 to 6 ($M = 4.16$, $SD = 1.12$). Finally, the totals mean score for the ratings of the degree of vividness indicates a ranges from 2.5 to 3.5 ($M = 4.51$, $SD = 2.90$).

Table 2. *Descriptive statistics for the TAS-20 and its three factors, the total number of negative emotional words in sad memories, the total number of negative emotional words in neutral memories, the degree of sadness, and vividness of sad memories (N = 35).*

Scale	Range		M	SD
	Min	Max		
Total TAS-20	31.00	66.00	48.03	8.78
DDF	7.00	21.00	13.49	4.42
DIF	9.00	26.00	14.97	4.37
EOT	10.00	29.00	19.29	4.22
Total N. Sad Memories	3.00	48.00	15.00	9.35
Sad Memory 1	1.00	24.00	7.11	4.33
Sad Memory 2	.00	24.00	7.89	5.90
Total N. Neutral Memories	.00	14.00	2.06	0.97
Total degree of Sadness	1.50	6.00	4.16	1.12
Total degree of Vividness	2.50	6.00	4.51	2.90

Note. M = means; SD = standard deviation; N. = number; TAS-20 = Toronto Alexithymia Scale-20; DIF=difficulty identifying feelings; DDF=difficulty describing feelings; EOT=externally-oriented thinking.

Subquestions

In order to examine the research question how the degree of alexithymia is related to the verbal emotional expression during the recall of sad memories, four subquestions are developed.

Subquestion 1: *How does the number of negative emotional words differ between sad and neutral memories?*

In this subquestion the difference between the number of negative emotional words in sad and neutral memories are examined. Firstly, the difference between the first sad memory and the second sad memory was investigated in order to ensure that both memories have the same value. A Wilcoxon test was conducted to investigate whether there is a difference

between numbers of emotional words in both sad memories. The results indicate no significant differences between the first sad memory and the second sad memory ($Z = .705, p = .481$). The mean range in the first sad memory shows a value of 16.75, and the mean range of the second sad memory show a value of 16.18. Further, an Univariate ANOVA for repeated measures shows significant differences between the number of negative emotional words in sad and neutral memories ($F(1, 34) = 54.94; p = .000$).

Table 3 shows the confidence interval for the difference between the number of negative words in sad memories and the number of negative words in neutral memories. The confidence intervals show that the number of negative emotional words indicates higher scores than the number of negative emotional words in neutral memories. In advance, the hypothesis was developed that people use more negative emotional words in sad memories than in neutral memories. With regard to the findings, the hypothesis can be confirmed.

Table 3. *Difference between the number of negative emotional words in sad memories and the number of negative words in neutral memories*

Condition	M (SD)	95 % CI	
		LL	UL
1 - 2	13.36 (1.65)	9.851	16.868

Note. 1 = number negative words in sad memories, 2 = number negative words in neutral memories, M = Mean difference, SD = Standard Error, CI = confidence interval, LL = lower limit, UL = upper limit

Subquestion 2: How is the number of negative emotional word use related to the vividness of sad memories?

Table 4 shows the correlation between the degree of alexithymia and the number of negative emotional words. In this subquestion the relation between negative emotional word use and the vividness of sad memories is examined. The number of negative emotional word use shows a non-significant correlation ($r = .194, p = .265$). In advance, the hypothesis was developed that there is a significant correlation between the number of negative emotional words and the vividness of sad memories. With regard to these findings, the hypothesis can be discarded.

Table 4. *Correlations between the degree of alexithymia, the vividness of sad memories and the number of negative words*

Correlation	Number Neg. Words Sad Memories
Total TAS-20	-.073
DDF	-.072
DIF	.029
EOT	-.055
Vividness of Memory	.194

Note. Neg. = Negative; TAS-20 = Toronto Alexithymia Scale-20; DIF=difficulty identifying feelings; DDF=difficulty describing feelings; EOT=externally-oriented thinking; * = correlation is significant by $p < .05$; ** = correlation is significant by $p < .01$.

Subquestion 3: How is the degree of alexithymia related to the number of negative emotional words during the recall of sad memories?

In this subquestion the relation between negative emotional word use and the degree of alexithymia is examined. Firstly, in order to investigate the relation of the two variables a correlation analysis between the number of negative emotional words and the recall of sad memories is executed. The results are presented in Table 4. The findings show a very weak negative correlation between the two variables ($r = -.073$; $p = .675$). However, the correlation is not significant. Furthermore, it was also expected that a negative correlation between the number of negative emotional words and the factor EOT can be found. The correlation analysis shows only a very weak negative correlation between the number of negative emotional words and the factor EOT ($r = -.055$; $p = .753$). In addition, correlation analysis between the number of negative emotional words and the other two factors DDF ($r = -.072$, $p = .682$) and DIF ($r = .029$, $p = .870$) show no significant correlations.

Initially, the hypothesis was developed that the number of negative emotional words is significantly related to the degree of alexithymia. With respect to the findings, the hypothesis can be discarded.

Subquestion 4: *How is the degree of alexithymia related to the vividness during the recall of sad memories?*

In this subquestion the relation between the degree of alexithymia and the vividness of sad memories is examined. The results are recorded in Table 4. The degree of alexithymia shows a very weak negative correlation with the vividness of sad memories. This correlation is not significant ($r = -.156, p = .372$). Initially, the hypothesis was developed that there is a significant correlation between the degree of alexithymia and the vividness of sad memories. Based on these findings, the hypothesis can be discarded.

DISCUSSION

Telling narratives have shown to have positive effects on physical and mental health. These effects are especially presented after negative experiences (Pennebaker & Seagel, 1999; Thomsen, 2013; Crossley, 2000a; Truong et al., 2013). Thereby, verbal emotional expressions play an important role in order to benefit from the health effects of telling narratives (Pennebaker & Seagel, 1999). Narrative psychology deals with the study of the self and identity and is concerned with the implications and permutations of those narratives (Crossley, 2000b). The aspect of narratives can be found to be an important part in psychotherapy. In psychotherapy, the aspect of telling narratives involves an important part in order to disclose the meanings of the narratives (Pennebaker, 1999). However, people with alexithymia are unable to appraise and to express their emotional feelings verbally (Parker, Prkachin & Prkachin, 2005).

In order to investigate the relation between the verbal emotional expression and the degree of alexithymia, the main goal of this study is to examine the relation between the number of negative words and the degree of alexithymia. The sample data for this study includes students' narratives. In this process, the students were asked to tell memories which have an emotional value. These memories include negative emotional experiences. In addition, the students were asked to rate these memories in order to determine the degree of vividness of these memories. Finally, the students filled in the TAS-questionnaire in order to examine the degree of alexithymia. Regarding to the main goal of the study, the following research question was defined: *How is the degree of alexithymia related to the verbal emotional expression during the recall of sad memories?*

To investigate the research question, four subquestions were developed. The first subquestion was: *How does the number of negative emotional words differ between sad and neutral memories?* The findings show a significant difference between the number of negative emotional words in sad and neutral memories. Further analysis showed that people used a higher rate of negative emotional words in sad memories than they used in neutral memories. This finding is in accordance with the study of Bohanek, Ficush and Walker (2004) who

revealed that negative narratives contain more negative emotional words than positive narratives. This indicates that sad memories contain relevant emotional words compared to non-emotional memories such as neutral memories. In addition, the ratings of the memories with regard to how sad the participants felt the recalling of the memories were investigated. It could be shown that the overall mean of these ratings show a high rate. Thus, the memories were true sad memories. Therefore, the following analyses with respect to sad memories are justified.

The second subquestion deals with the following question: *How is the number of negative emotional words related to the vividness of sad memories?* With regard to the analysis findings there is no significant relation found between the number of negative emotional words and the vividness of sad memories. A possible explanation can be found in the study from Talarico, Labar and Rubin (1988). Talarico, Labar and Rubin (1988) show that the type of memory does not play a role in the vividness of memories, but rather the intensity of emotions determines how vivid memories are felt. Relating these findings to this study, this means that the number of negative words in sad memories would not indicate how vivid a memory would be judged, but rather the intensity of memory determines the degree of judged vividness. Therefore, it could be that some participants did not use many negative words because of the fact that these memories were sad but not in a very intensive way.

The third subquestion comprises: *How is the degree of alexithymia related to the number of negative emotional words during the recall of sad memories?* The findings show no relation between the number of negative emotional words and the degree of alexithymia during the recall of sad memories. This is not in accordance with recent study findings. However, there is a difference found between the number of negative emotional words in sad memories and in neutral memories. Furthermore, it is shown that the use of negative emotional words is higher during the recall of sad memories. Thus, this confirms the hypothesis that the number of negative emotional word use during telling sad memories differs significantly from the number of negative emotional word use during telling neutral memories regarding to the degree of alexithymia. Nonetheless, the current findings are not in accordance with recent study findings. Wagner and Lee (2007) found a significant relation between the verbal expression of negative emotions and the degree of alexithymia in their study. Explanations for the different findings can possibly be found in the different conditions of both studies, meaning two different sample characteristics would lead to different results. However, investigating the mean scores of the TAS-20 of both studies, no differences can be found. Another explanation can possibly be found in the different procedures between the study from Wagner and Lee (2007) and this study. Firstly, Wagner and Lee (2007) had hidden the camera in order that the participants did not feel awkward in the presence of a camera. The current study did not hide the camera which might have had an influence on the content

of the told memories. Secondly, the participant wore a tie clip microphone which led to the audio recorder. This leads to a better quality of voice recordings which in turn constitute a better precondition for transcribing the recordings. Possibly, in this way words are not correctly or poorly understandable during the transcription of data. Further, Wagner and Lee (2007) used a light to determine the time the participants should tell. Thereby, the participants know how long they have to speak for. With regard to this study, the participants had only the clock on the computer screen. It also could be that the participants did not take intensive care of the clock and thus spend less time to talk about their memories than they would have done if a light would have been present to indicate the starting and the end point.

Finally, the last subquestion deals with the question: *How is the degree of alexithymia related to the vividness during the recall of sad memories?* With respect to the analysis findings, only a weak negative but not a significant relation was found. These findings are not in accordance with a study from Mantani et al. (2005). Mantani et al. (2005) show that subjects with a high degree of alexithymia rated imaginations less vivid than subjects with no degree of alexithymia. The main difference between the study from Mantani et al. (2005) and this study regards to the different research variables. Mantani et al. (2005) investigated the imagination of memories and this study investigates personal memories. A possible explanation therefore could be that only the imagination process of alexithymia plays a significant role in emotional memories and less the vividness of these memories. Therefore, investigations with respect to imagination processes and the degree of alexithymia could give more insight in the disorder of alexithymia. In place of judges of vividness, which was used in this study, Mantani et al. (2005) asked the participants to name a specific event that, when imagined, would make the participant happy or sad. Thereby, they have to name a future and a past event. In addition, every participant was asked to name an event where he or she felt neutral. For the future event, the participants were asked to name an event, which they could imagine where they realistically expect that it could occur, in the greatest possible detail. After that, the researcher assessed if the emotions were appropriate. Further, the participants were asked to name emotionally key words which were also assessed through the researcher. This procedure from Mantani et al. can be a possible procedure for further investigation with regard to imagination and the degree of alexithymia.

Strengths and limitations of this study

There are several strengths as well as weak points in this study. The first strength of this study regards to the exercise in the beginning of the experiment. The participants had the possibility to exercise the recall of a memory with the examiner. Thereby, the examiner can detect mistakes the participants did (e.g. the participant talks only one minute) and can encourage the participant to do it in another way. In addition, the participant could ask questions during

the exercise which in turn can prevent further mistakes during the true experiment. Possible mistakes are that the participants do not talk three minutes or do not tell a memory in a specific way. A further strength of this study comprises that the participants told their memories in an oral way. Thereby, the participants can tell in a free way about their memories. In the case that participants express their memories through writing, the possibility is given that specific emotional words will be thought but not written down by the participant. An explanation for this could be that the participants do not want to show how sad or how angry they feel because of social desirability. Another strength can be found in the distributions of samples. An approximately equal number of participants from both genders took part in this study. Furthermore, there is a wide distribution of the age. Moreover, the ranges of TAS-20 scores are conformed to the range scores of other studies. Therefore, a too low or too high degree of alexithymia cannot distort the study analysis.

However, several weak points can be found in this study which could explain the different result findings. Firstly, only a small sample size is used. A bigger sample size would be more representative. Secondly, the presence of the camera and the voice recorder could impair the participants in their feeling to freely talk about their memories. The participant could feel awkward in front of a camera and as a result tell fewer details about the emotional memory. Another weak point of this study regards to the degree of alexithymia. This study considered only a general population sample with a low to moderate degree of alexithymia. A study which includes a sample of people with a high degree of alexithymia could give more significant results. It could be expected that people with a high degree of alexithymia would tell significant fewer emotional words than people with a low to moderate degree of alexithymia. Thus, the possibility for a significant correlation between the number of emotional words and alexithymia would be higher. Further, the people who transcribed the data were not native Dutch speakers. However, the data of the participants was all told in Dutch. Therefore, there is a high possibility that not all words are transcribed in a correct manner. A final weak point could be the type of representation of the cue words given during the experiment. A recent study from Mazzoni, Vannucci and Bacool (2014) shows that more involuntary memories were obtained with verbal than with pictorial cues. Verbal cues could be given through the researcher. However, it is important that the researcher does not give more instructions than the cue should give. Otherwise, the researcher could navigate the content of the memory of the participant in a specific way which could lead the participant to talk about the associations the researcher gives the participant in place of their own associations regarding a specific cue. For example, the participant does not find an appropriate memory which fits to the cue. Then the researcher could be prone to give examples. This could lead to several bias.

For future studies, the following recommendations should be considered. Firstly, a bigger sample should be included. At least 100 participants should be included for the data collection. Furthermore, in place of vividness the intensity of memories should be investigated. A possible procedure involves not only a simple judgment of the memory but the imagining of specific situations (for the past as well as for the future) and describes them in a detailed manner (see Wagner & Lee, 2007). There, coding schedules can be used in order to assess how the descriptions fit the emotional value of the memory. For example, an individual with a high score of alexithymia would describe his imagination about a horrible day much less emotional negative as an individual with a low degree of alexithymia would do. Another important recommendation for further studies regards to the people who transcribed the data. The people who transcribed the data should have the same native language as the participants themselves. Further, if a camera is needed, it should be hidden. Otherwise, instruments, such as a camera should be avoided. A further recommendation relates to the sample itself. Most participants were psychology students (40 %). Psychology students are familiar with various questionnaires. This could lead to several biases. In place of psychology students, participants with a higher degree of alexithymia should be involved in order to get more significant results. This could be participants who are diagnosed with alexithymia. Furthermore, this study investigated only the verbal aspects of emotional expressions. It is known that non-verbal aspects, such as the facial expression (Wagner & Lee, 2007), also comprise emotional expressions. An interesting question could be how people with a high degree of alexithymia use non-verbal emotional expressions. In this context, Wagner & Lee (2007) show significant relations between the factors difficulty describing feelings and difficulty identifying feeling of alexithymia and facial expressions. Therefore, future studies should investigate the use of non-verbal emotional expressions with regard to people with a higher degree of alexithymia.

In relation to the practice of psychotherapy, the following recommendations should be considered. Although no significant relations were found in this study, numerous studies showed inverse significant relations between alexithymia and the use of emotional words (Vanheule, 2010; Wagner & Lee, 2007; Lane et al., 1996). That means people with a high degree of alexithymia use less emotional words. Therefore, a decreased use of emotional words after high emotional experiences could be a possible indicator for the degree of alexithymia. With respect to the health effects of verbal emotional expression after negative experiences, the assumption can be made that disclosure in form of the use of emotional words should be facilitated in psychotherapy sessions. Therefore, further research should investigate how the promotion of emotional word use can enhance the ability of emotional processing for people with a high degree of alexithymia. These findings could give new

indications for developing methods with regard to the treatment for people with a high degree of alexithymia.

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ATTACHMENT

GEÏNFORMEERDE TOESTEMMING

Het ophalen van herinneringen

Ik, (*naam proefpersoon*)

Stem toe mee te doen aan een onderzoek dat uitgevoerd wordt door

Jasmin Plesse, Nikka Golena, Ylva Gerke, Lisa Stahlkopf, Sarah Kettendörfer en Sarah Kurney

Ik ben me ervan bewust dat deelname aan dit onderzoek geheel vrijwillig is. Ik kan mijn medewerking op elk tijdstip stopzetten en de gegevens verkregen uit dit onderzoek terugkrijgen, laten verwijderen uit de database, of laten vernietigen.

De volgende punten zijn aan mij uitgelegd:

1. Het doel van dit onderzoek is inzicht te verkrijgen in hoeverre herinneringen opgehaald worden.
2. Het onderzoek duurt ongeveer 60 minuten.
3. Aan het begin wordt een vragenlijst over de demografische gegevens afgenomen. Daarna zal aan mij gevraagd worden een blije, een verdrietige/boos en een neutrale herinneringen op te halen en te vertellen. Daarnaast worden drie vragenlijsten afgenomen die telkens persoonlijkheid (NEO-FFI), alexithymie (TAS) en het omgaan met herinneringen (RFS) meten.
4. Je mag altijd stoppen als je niet op je gemak voelt of een vraag niet wilt beantwoorden.
5. Er behoort geen stress of ongemak voort te vloeien uit deelname aan dit onderzoek.
6. De gegevens verkregen uit dit onderzoek zullen anoniem verwerkt worden en kunnen daarom niet bekend gemaakt worden op een individueel identificeerbare manier.
7. De onderzoeker zal alle verdere vragen over dit onderzoek beantwoorden, nu of gedurende het verdere verloop van het onderzoek.

Handtekening onderzoeker:
.....

Datum:

Handtekening proefpersoon:
.....

Datum:

1. Instructie

De volgende test gaat ook over je geheugen, maar dan over het geheugen voor persoonlijk ervaren gebeurtenissen. Je krijgt zo enkele woorden te zien. Ik wil je vragen bij elk woord te vertellen aan welke specifieke gebeurtenis dat woord je doet denken. Het gaat hierbij om herinneringen aan gebeurtenissen die je zelf hebt meegemaakt, minstens 1 jaar geleden. Die herinneringen mogen over van alles gaan. Het mag een herinnering zijn die nog niet zo lang geleden gebeurd is, maar ook een herinnering van veel langer geleden, bijvoorbeeld van tien of meer jaar geleden. Je hoeft je niet te beperken tot een bepaald thema of onderwerp, zolang het maar herinneringen zijn van minstens 1 jaar geleden.

Begin gewoon bij de eerste herinnering die in je opkomt. Wel is het de bedoeling dat de herinneringen die je ophaalt specifiek zijn. Met specifiek bedoel ik dat de herinnering verwijst naar één bepaalde gebeurtenis die op één bepaalde dag plaats vond. Ik zal je een voorbeeld geven van een specifieke herinnering. We nemen het woord "leuk". Stel dat je dan zegt "ik houd van leuke feesten". Zo'n uitspraak is niet specifiek, want hij verwijst niet naar één bepaalde gebeurtenis maar naar een heleboel gebeurtenissen. Ook als je zou zeggen "Mijn vakantie in Frankrijk vorig jaar was leuk" dan is dat geen specifieke herinnering. Een vakantie beslaat immers een periode in plaats van één bepaalde dag. Als je zegt "Ik vond het leuk dat Arno me vorig jaar met Valentijnsdag met bloemen verraste" dan is dat wél een specifieke gebeurtenis. Is het duidelijk wat ik met een specifieke herinnering bedoel?

We vragen je straks steeds twee herinneringen te beschrijven bij elk woord. Het is belangrijk dat je bij elk woord steeds een andere herinnering of gebeurtenis noemt. Je mag dus niet tweemaal naar exact eenzelfde gebeurtenis of herinnering verwijzen.

We willen je dan vragen de herinnering weer levendig voor jezelf op te roepen. Leef je weer zo goed mogelijk in de situatie van toen in. Probeer je weer zo te voelen zoals je je toen voelde.

Probeer zo precies mogelijk te beschrijven wat er gebeurde. Spreek over elke herinnering ongeveer 3 minuten. Beschrijf dus alles zo concreet mogelijk. Denk aan vragen als:

- Waar was je?
- Hoe zag de omgeving eruit?
- Wat deed je?
- Wat dacht je?
- Wat voelde je?
- Wat had je aan?
- Wie was erbij?
- Wat werd er gezegd?

Begrijpt je wat de bedoeling is? Heb je nog vragen?

2. Oefening: heel kalm

Het eerste woord is om te oefenen. Dat nemen we samen door. Het woord is heel kalm.

Neem eerst even tijd om je in te leven en beschrijf dan zo concreet mogelijk wat er gebeurde.

Kun je nog een tweede herinnering vertellen over heel kalm?

Ik zou je nu willen vragen om de herinneringen te beoordelen.

Testleider: Ga na of de deelnemer de instructie goed begrepen heeft

3. Neutrale beschrijving

We doen nog een kleine tussenoefening voordat we echt beginnen.

Zou je me nu gedetailleerd kunnen beschrijven hoe je hier naartoe gekomen bent?

Testleider laat de deelnemer nu alleen

4. Eerste woord: heel verdrietig

Okay, dan gaan we nu echt beginnen.

Het eerste woord is heel verdrietig.

Kun je hier een specifieke herinnering bij oproepen die ouder is dan een jaar?

Neem eerst even tijd om je in te leven.

Kun je de herinnering zo gedetailleerd mogelijk vertellen?

Heb je nog een tweede herinnering over heel verdrietig?

Neem eerst weer even tijd om je in te leven en beschrijf dan zo concreet mogelijk wat er gebeurde.

Ik zou je nu willen vragen om de herinneringen te beoordelen.

5. Neutrale beschrijving

We doen weer een kleine tussenoefening voordat we naar het volgende woord gaan.

Zou je me gedetailleerd kunnen beschrijven hoe je (woon)kamer eruit ziet?

4. Tweede woord: heel boos

Het tweede woord is heel boos.

Kun je hier een specifieke herinnering bij oproepen die ouder is dan een jaar?

Neem eerst even tijd om je in te leven.

Kun je de herinnering zo gedetailleerd mogelijk vertellen?

Heb je nog een tweede herinnering over heel boos?

Neem eerst weer even tijd om je in te leven en beschrijf dan zo concreet mogelijk wat er gebeurde.

Ik zou je nu willen vragen om de herinneringen te beoordelen.

5. Neutrale beschrijving

We doen weer een kleine tussenoefening voordat we naar het volgende woord gaan.

Zou je me gedetailleerd kunnen beschrijven hoe je keuken eruit ziet?

6. Derde woord: heel blij

Het derde woord is heel blij.

Kun je hier een specifieke herinnering bij oproepen die ouder is dan een jaar?

Neem eerst even tijd om je in te leven.

Kun je de herinnering zo gedetailleerd mogelijk vertellen?

Heb je nog een tweede herinnering over heel blij?

Neem eerst weer even tijd om je in te leven en beschrijf dan zo concreet mogelijk wat er gebeurde.

Ik zou je nu willen vragen om de herinneringen te beoordelen.

Beoordeling van elke herinnering

Welke titel zou je deze herinnering geven?

Hoe lang geleden vond deze herinnering plaats? ... jaar geleden

Bij de volgende vragen kun aangeven in welke mate de vragen van toepassing zijn op een schaal van 1 tot 6. 1 betekent helemaal niet en 6 betekent helemaal wel.

Hoe levendig is deze herinnering <i>tegenwoordig</i> voor je?	1	2	3	4	5	6
Hoe belangrijk is deze herinnering <i>tegenwoordig</i> voor je?	1	2	3	4	5	6
Hoe blij voel je je <i>tegenwoordig</i> over deze herinnering?	1	2	3	4	5	6
Hoe verdrietig voel je je <i>tegenwoordig</i> over deze herinnering?	1	2	3	4	5	6
Hoe boos voel je je <i>tegenwoordig</i> over deze herinnering?	1	2	3	4	5	6
Hoe kalm voel je je <i>tegenwoordig</i> over deze herinnering?	1	2	3	4	5	6

Toronto Alexithymia Scale-20

Geef aan in hoeverre u het eens of oneens bent met de volgende uitspraken door het betreffende cijfer te omcirkelen. U dient per uitspraak één antwoordmogelijkheid te omcirkelen.

Omcirkel het cijfer

1 als u het erg oneens bent met de uitspraak

2 als u het nogal oneens bent

3 als u het niet oneens bent, maar ook niet eens

4 als u het nogal eens bent

5 als u het erg eens bent met de uitspraak

Ik ben vaak in verwarring over wat ik voel	1	2	3	4	5
Ik vind het moeilijk de juiste woorden voor mijn gevoelens te vinden	1	2	3	4	5
Ik heb lichamelijke gevoelens die zelfs artsen niet begrijpen	1	2	3	4	5
Ik kan mijn gevoelens gemakkelijk beschrijven	1	2	3	4	5
Ik vind het prettiger problemen te analyseren dan ze alleen maar te beschrijven	1	2	3	4	5
Wanneer ik van streek ben, weet ik niet of ik verdrietig, bang of boos ben	1	2	3	4	5
Mijn lichamelijke gevoelens stellen me vaak voor raadsels	1	2	3	4	5
Ik vind het prettiger dingen gewoon te laten gebeuren, dan te begrijpen waarom ze zo gebeuren	1	2	3	4	5
Ik heb gevoelens die ik helemaal niet kan thuisbrengen	1	2	3	4	5
Het gaat erom, dat je je bewust bent van je gevoelens	1	2	3	4	5
Ik vind het moeilijk te beschrijven wat ik vind van andere mensen	1	2	3	4	5
Men zegt mij dat ik mijn gevoelens meer moet beschrijven	1	2	3	4	5
Ik weet niet wat er zich binnenin mij afspeelt	1	2	3	4	5
Ik weet vaak niet waarom ik boos ben	1	2	3	4	5
Ik praat met anderen liever over hun dagelijkse bezigheden dan over hun gevoelens	1	2	3	4	5
Ik kijk liever naar amusementsprogramma's dan naar psychologische drama's	1	2	3	4	5
Ik vind het moeilijk mijn diepste gevoelens prijs te geven, zelfs aan goede vrienden	1	2	3	4	5

Ik kan me dichtbij iemand voelen, zelfs tijdens ogenblikken van stilte	1	2	3	4	5
Ik vind het onderzoeken van mijn gevoelens nuttig voor het oplossen van persoonlijke problemen	1	2	3	4	5
Zoeken naar de bedoeling achter films en toneelstukken leidt je af van het genieten ervan	1	2	3	4	5

Debriefing

We danken u voor uw deelname aan ons experiment!

Zoals u misschien aan de vragen van ons heeft opgemerkt, is het doel van dit onderzoek niet alleen het ophalen van persoonlijke herinneringen. In dit onderzoek ging het over twee verschillende punten: Ten eerste was het van belang om te kijken welke soort woorden (emotiewoorden, persoonlijke voornaamwoorden) gebruikt worden om emoties uit te drukken tijdens het ophalen van zowel positieve als ook negatieve herinneringen. Ten tweede is het de bedoeling om te toetsen of er een samenhang bestaat tussen de verbale expressie van emoties en alexithymie of persoonlijkheid. Voor de persoonlijkheid hebben we de NEO-FFI gebruikt en voor de mate van alexithymie de TAS. Alexithymie is een psychiatrische stoornis waarbij de patiënten moeilijkheden hebben met het identificeren, beschrijven en uitdrukken van emoties.

Wij willen u nog eens medelen dat uw data anoniem worden behandeld en niet aan derden worden verspreid.

Uiteindelijk willen wij u nog verzoeken om niets van dit onderzoek aan derden (mogelijke proefpersonen) te vertellen. Dit zou namelijk de uitslag kunnen beïnvloeden.

Bovendien heb je het recht om één of meerdere onderzoeksverslagen bij ons aan te vragen via: L.A.Stahlkopf@student.utwente.nl of s.kurney@student.utwente.nl. Deze zal u dan na afloop van het onderzoek toegestuurd krijgen.