

The original publication is available on <http://dx.doi.org/10.1016/j.jbtep.2011.12.005>

Reduced Memory Specificity Predicts the Acquisition of Problem Solving Skills in
Psychoeducation

Tom Van Daele, Omer Van den Bergh, Chantal Van Audenhove, Filip Raes & Dirk Hermans

University of Leuven

Author note

Tom Van Daele, Policy Research Centre Welfare, Health and Family & Research Group on Health Psychology, University of Leuven; Omer Van den Bergh, Research Group on Health Psychology, University of Leuven; Chantal Van Audenhove, Policy Research Centre Welfare, Health and Family & Research Group on Health Psychology, University of Leuven; Filip Raes and Dirk Hermans, Centre for the Psychology of Learning and Experimental Psychopathology, University of Leuven.

Correspondence concerning this article should be addressed to Dirk Hermans, Centre for the Psychology of Learning and Experimental Psychopathology, Tiensestraat 102, 3000 Leuven.

Email: Dirk.Hermans@ppw.kuleuven.be

Abstract

Background and Objectives

Research has shown that overgeneral autobiographical memory (OGM) is a valid predictor for the course of depression. It is not known, however, whether OGM also moderates information uptake and consolidation in a psychoeducation program to prevent stress, anxiety and depression. The present study was designed to investigate whether the Autobiographical Memory Test (AMT; Williams, & Broadbent, 1986) is a valid predictor for the actual unfolding of skills learned through psychoeducation.

Methods

The questionnaire included primarily the AMT and the Stress Anxiety Depression Means-Ends Problem Solving Questionnaire (SAD-MEPS). It was filled in prior to and after the psychoeducational course by 23 participants.

Results

Correlations were calculated for the AMT at baseline and the differences between the pre and post measurements on the SAD-MEPS. Significant correlations were observed between the number of specific responses and the changes in the number of relevant means ($r = .49, p < .01$).

Limitations

The sample size was rather small, but several checks were able to reduce the chance of spurious findings.

Conclusions

These findings may have important implications for the guidance to and the setup of psychoeducational interventions. Suggestions include screening and memory specificity training prior to course commencement.

1. Introduction

In the past twenty years a large amount of research has focused on the predictive validity of overgeneral autobiographic memory (OGM) for the course of depression. OGM is the difficulty to recall specific memories from one's past life. Instead of reporting memories that refer to a specific context and last less than a day, overgeneral memories are reported. These last longer than a day or are recurring events (Gibbs & Rude, 2004). Within the population, there is some variance in the level of specificity between individuals, but people who suffer from depression or posttraumatic stress disorder (PTSD) generally have a less specific autobiographic memory (Harvey, Bryant, & Dang, 1998; Williams et al., 2007).

Reduced memory specificity has been found to be a predictor for a worse course of depressive and trauma-related anxiety disorders. An early study by Brittlebank, Scott, Williams, and Ferrier (1993) with patients meeting the criteria of major depressive disorder reported that overgenerality was highly correlated with failure to recover from depression (also see: Raes, Hermans, Williams, Beyers, Brunfaut, & Eelen, 2006). Gibbs and Rude (2004) found that students with high frequencies of stressful life events and high OGM demonstrated higher levels of depressive symptoms four to six weeks later. In a study by Raes, Sienaert, Demyttenaere, Peuskens, Williams, and Hermans (2008) OGM predicted an unfavorable course of depression in an electroconvulsive therapy, with patients high in OGM having increased depression scores at follow-up. Furthermore, for patients with PTSD, poor recall of specific memories of their trauma accounted for 25% of the variance of PTSD severity 6 months post trauma (Harvey, Bryant, and Dang, 1998).

Memory specificity also appears to be a valid predictor for the clinical status at follow-up for patients with major depression disorder (MDD). According to Hermans et al. (2008), for

these patients, high levels of OGM increased the probability of still being diagnosed with MDD three to four weeks later. In a recent meta-analysis, Sumner, Griffith and Mineka (2010) evaluated the available data for a total of 15 studies. They concluded that OGM is predictive of more elevated depressive symptoms at follow up.

Several explanations can be offered for why reduced memory specificity is associated with a worse prognosis in a variety of mental health disorders (see Raes, Williams, & Hermans, 2009). First, reduced memory specificity is known to block efficient social problem solving strategies. As mentioned by Baddeley (1988), when referring to non-clinical samples, specific memories of past situations are used as a frame of reference to guide problem solving in the present. So when people face a problem, they tend to think back to comparable situations and use their knowledge of what worked earlier on for such a problem. Overgeneralization, i.e. not being able to access these specific memories, leads to poor problem solving, both in non-clinical and clinical samples. (Evans, Williams, O'Loughlin, & Howells, 1992; Goddard, Dritschel, & Burton, 1996; Pollock & Williams, 2001; Raes et al., 2005). For depressed individuals, not being able to solve social problems can contribute to the continuation of depressive feelings and, in turn, lead to more persistent depression.

Second, individuals who are overgeneral about the past also appear to be overgeneral about their future. Williams, Ellis, Tyers and Healy (1996) reported that the degree of difficulty in generating specific images of the future was found to correlate with the extent to which subjects failed to retrieve specific autobiographical memories from their past. Such an aspecific, blurred perspective on the future might engender feelings of indifference and hopelessness.

Third, reduced memory specificity might lead to poor emotional processing. After being faced with a negative event, thinking and talking in a specific manner about such an experience is an easy way to reexpose oneself, allowing the individual to emotionally process the negative emotional experience (Littrell, 1998). Not being able to access specific memories of past situations may lead to a much lower level of natural exposure.

A fourth pathway suggested by Raes, Hermans, Williams, Beyers, Brunfaut and Eelen (2006) is a reciprocal interplay of OGM with rumination. Both may represent two different aspects of a common underlying process. This process would be discrepancy-driven and attempts to use analytical thinking (rumination) and overly general self-referent knowledge (OGM) to solve personal problems. Two aspects of this process are key: 1) verbal-abstract analytic reasoning e.g. questions, “Where did it all go wrong?” combined with 2) self-relevant material in the form of categoric statements (“Always alone”, “Feeling unhappy”, “Never relaxed”). Both of them interact and fuel each other, creating a spiral interaction, producing fruitless attempts resolving problems, thus enhancing depressive feelings and feelings of hopelessness (Williams et al., 2007).

The issue of how reduced memory specificity impacts the course of disorders like depression is both theoretically and clinically relevant. In addition to the four aforementioned pathways, we believe that there might be an additional process involved. More specifically, we argue that reduced memory specificity might impact the extent to which patients can benefit from psychotherapy. Most therapies include components of psychoeducation or include other elements of knowledge transfer or information that needs to be stored in memory (e.g. new insights, agreements and homework assignments). Many of these elements play a crucial role in

the effectiveness of interventions (Stice, Shaw, Bohon, & Marti, 2009). From our own experience, we know that patients can strongly differ in the extent to which they recall elements of previous therapeutic sessions. Some clients have very vivid and specific memories (e.g. “Last session, you mentioned how I make things more difficult by avoiding my sister. This has kept me busy. Observing myself last week, I think I must agree.”), whereas other patients are left with a mere general sense of what happened in the last session (e.g. “It was a good session”, “We talked about stress”). The extent to which specific memories can be retrieved with respect to therapy sessions may codetermine the efficacy of treatment. Patients who are more specific may benefit more, as they have better access to new perspectives and interpretations, suggested problem solving strategies, and will be able to implement these elements in between sessions (e.g. behavior change). As a result, not being able to retrieve specific memories of therapy sessions might be an additional mechanism through which reduced memory specificity impacts the course of emotional disorders. Some prospective studies have already focused on this the relationship between autobiographical memory specificity and treatment for depression (Brittlebank et al., 1993; Peeters, Wessel, Merckelbach, & Boon-Vermeren, 2002; Raes et al, 2006), finding some evidence that treatment effectiveness could be predicted by autobiographical memory specificity. Nevertheless, these have mainly focused on the predictability of memory specificity for complaints at a future time, whereas the current study focuses on whether memory specificity is predictive for the extent to which problem solving skills are acquired through a psychoeducational course.

In line with our hypothesis, the present study was therefore primarily designed to investigate whether differences in memory specificity are associated with the extent to which persons can benefit from a psychoeducational intervention for stress, anxiety and depression.

Psychoeducational interventions may be particularly sensitive to differences in memory specificity as they mainly rely on the transfer of information to impact behavior outside the session. Because the psychoeducational program under investigation primarily focused on the acquisition of new problem solving skills, the dependent variable in this study concerned changes in problem solving skills from pre- to post-treatment. Rather than measuring problem solving through self-report, we employed a behavioral task (Mean Ends Problem Solving task; MEPS, Platt & Spivack, 1975). The main advantage of using this behavioral task is that participants are not simply asked to report on how they solve problems in general, but actually have to solve presented problems. This test has been shown to provide more valid and accurate measures of participants' problem-solving capabilities.

It was predicted that memory specificity would be associated with changes in problem solving skills, such that the more specific the participant (as measured at the start of the training), the more benefit in terms of problem solving skills acquisition. In addition, we also investigated changes in self-reported complaints, but these were considered as less relevant for the present research question given that such changes might be short-term effects that are unrelated to the process of acquiring long lasting problem solving skills (e.g. remoralization, hope, relief, social comparison). Two secondary short-term relationships were nevertheless expected. A first relationship was between changes in problem solving and self-reported complaints, with a higher increase in problem solving strategies being related to a larger decline in self-reported complaints. A second relationship was between memory specificity and self-reported complaints, such that the more specific the participant, the greater the decrease in self-reported complaints.

2. Method

2.1. Participants

Twenty-three students (17 women, 6 men) from two stress prevention courses organized in the spring of 2007, agreed to participate in this study. The average age was 21.7 years ($SD = 1.9$; range 19-26) and all participants were Dutch-speaking. The courses were organized by the Psychotherapeutic Centre of the University of Leuven and students were informed of these courses through the university's website and/or by a general mailing to all Dutch-speaking students in the university. As an incentive for participation in the research, cinema tickets were raffled.

2.2. Materials

2.2.1. AMT

Memory specificity was measured using the AMT. Based on the extended version of the Dutch AMT (Raes, Sienaert, Demyttenaere, Peuskens, Williams, & Hermans, 2008) two parallel versions were created containing 20 cue words each. The words were matched for familiarity, imageability and emotional intensity. In this version of the AMT, participants were asked to write down a specific memory in response to 20 cue words of alternating valence, with ten positive and ten negative words. Parallel version A contained the following words: *pleasurable, angry, attentive, emotionally hurt, proud, angry, social, clumsy, enthusiastic, disappointed, self-confident, alone, competent, desperate, succeeded, jealous, surprised, ashamed, satisfied, and failed*. Parallel version B consisted of: *active, furious, interested, guilty, brave, powerless, safe, sorry, carefree, anxious, happy, scared, relaxed, lonely, successful, hopeless, brave, sad, helpful, and unhappy*. These are all translations of the original Dutch words. Reported memories can be

roughly divided in two groups. Specific memories are personal memories that refer to one particular event, localized moment in time, lasting less than one day (e.g. “The moment I heard I got the job at the pet shop”). Non-specific memories are subdivided in categoric and extended memories, omissions, same events and no memories. Generalized categoric memories are memories that may have occurred more than once (e.g. “Every time I went to my friends”). Generalized extended memories on the other hand refer to an event that may have happened only once, but that lasted longer than one day (e.g. “During my vacation in Spain last year”). When memories were coded, this scoring procedure produced a good inter-rater reliability ($K = .79$).

2.2.2. *SAD-MEPS*

The SAD-MEPS is an adapted version of the Means-Ends Problem Solving Questionnaire (MEPS) developed by Platt and Spivack (1975). Like the original MEPS the SAD-MEPS is used as assessment of problem-solving skills. It consists of a series of short stories with interpersonal problem situations faced by a hypothetical protagonist. In each story, this protagonist is presented with a problem, which is immediately followed by the successful resolution. Respondents have to provide the middle of the story with the means and strategies to reach its resolution. In the adapted version, stories are related to situations of stress, anxiety or depression (Hermans, Ruys, Vuerstaek, Van Daele, & Raes, 2007). Three parallel versions of the adapted format were used. In each version, three stories were presented: one concerning stress, one concerning anxiety and one concerning depression. Each story was scored for relevant means according to the manual of Platt and Spivack (1975). A relevant mean is defined as being a discrete sequential step enabling the protagonist to reach the goal described in the story. Furthermore, also the overall effectiveness of the stories was calculated on a 7-point Likert scale

ranging from *not at all effective* to *extremely effective* following a method provided by Fischler, Kendall and Vye (1982). For both scales, the average of all three stories was calculated. The interrater reliability was good for number of means ($ICC = .74$) and acceptable for effectiveness ($ICC = .62$).

2.2.3. DASS-42

To assess levels of depression, anxiety and stress, the Dutch version of the Depression Anxiety Stress Scales-42 (DASS-42; Lovibond & Lovibond, 1995; Dutch version by de Beurs, Van Dyck, Marquenie, Lange, & Blonk, 2001) was used. The internal consistency for the three subscales in this study was high ($.92 > \alpha > .95$).

2.2.4. PSWQ

The Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990; Dutch version by van Rijsoort, Vervaeke, & Emmelkamp, 1997) was included in the study to measure beyond typical symptoms. Worrying was therefore considered as an additional symptom and as an underlying process of psychopathology (Raes, 2005). The questionnaire showed an acceptable internal consistency ($\alpha = .78$) in this study.

2.3. Procedure

2.3.1. Intervention

The psychoeducational course ‘Stress Control’ is based on the work of Jim White (White & Keenan, 1990; White, Keenan & Brooks, 1992; Borkovec & Whisman, 1996). It is aimed at groups and delivered by a trained clinical psychologist. For six sessions of two hours, twelve

steps are run through. The first step corresponds with the first session and consists of general information concerning stress. This provides a framework for the session to follow. Steps 2 and 3 are linked to the first session and are homework assignments. The idea behind this is that participants learn to apply the general information to their own personal situation and create a personal frame of reference. In this way they will have less effort to select the information that is being presented in the subsequent sessions which can be relevant for them. Steps 4 to 12 are used to examine a few contents in a more detailed way. Step 4 (Session 2) takes a closer look to body control combined with breathing exercises; Step 5 discusses (Session 3) cognitive techniques in combination with relaxation; and Step 6 (Session 4) teaches new skills in combination with relaxation. Step 7 to Step 10 (Session 5 and 6) used the knowledge from the first session and the learned techniques from Session 2 and 3 and apply them to anxiety, panic, sleeping problems and depressive feelings, and burnout. Finally, Steps 11 and 12 (Session 6) provide an overview as guidance for future stress control. Both courses were administered by the same clinical psychologist, who had received prior training by the organization that adapted the original course to the Flemish situation.

2.3.2. Assessment

Questionnaires were provided using the online survey site SurveyMonkey.com (SurveyMonkey.com, Portland, Oregon, USA). First the AMT was presented (only before the intervention), followed by the DASS, PSWQ and MEPS (administered before and after the intervention). These were made available one week before course commencement and one week after course completion. To monitor each individual's evolution, participants had to enter a

personal code before commencing with the questionnaire. After agreeing to an informed consent form, they were able to fill out the questionnaires.

3. Results

3.1. Participant characteristics

DASS scores before the intervention were 11.48 ($SD = 7.80$) for depression, 12.48 ($SD = 9.05$) for anxiety and 18.61 ($SD = 10.72$) for stress. For worrying, a mean PSWQ-score of 48.74 ($SD = 8.42$) was obtained. Overall, compared to Dutch normative data (de Beurs, personal communication, 28 October 2007), DASS-scores were closer to those of a clinical sample than to scores of the normal population. Worrying, furthermore, was slightly higher compared to the normal Dutch population (van Rijsoort, Vervaeke, & Emmelkamp, 1997).

3.2. Changes in Self-reported Complaints

DASS scores show a significant decline of complaints on all subscales, especially for depressive complaints (Table 1). Worrying, as measured by the PSWQ, shows a borderline statistically significant decline.

3.3. Autobiographical memory and changes in problem solving skills

Correlations were calculated for the AMT categories at baseline and the differences between the pre and post measurements on the two SAD-MEPS scores. Significant correlations were observed between the number of specific responses and the changes in the number of relevant means. This was true for the overall level of specific memories ($r = .49, p < .01$). Memory

specificity went hand in hand with positive changes in the number of suggested problem solving strategies throughout the psychoeducational program (Figure 1).

In addition to the associations with memory specificity, a correlation was observed between changes in 'number of means' on the SAD-MEPS and the number of general extended responses ($r = -.39, p < .05$)¹. Finally, a borderline statistical significant correlation was found for changes in overall effectiveness and the no memory category, ($r = -.35, p = .06$).

3.4. SAD-MEPS Performance & Relationship to Complaints

For all participants, the average number of means reported in the SAD-MEPS was 3.04 ($SD = 1.03$) before the course and 3.09 ($SD = 0.98$) after course completion. The quality of the reported means was 4.03 ($SD = 1.00$) before course commencement and 3.87 ($SD = 0.82$) afterwards. Neither the change in means nor the change in effectiveness of the SAD-MEPS responses were significant, both $F_s < 1$.

Furthermore, correlations were calculated for the DASS and the PSWQ change scores and the two SAD-MEPS subscales. No statistically significant correlations were found ($r_s < .33, p_s < .13$).

3.5. AMT Performance and Relationship to Complaints

Approximately 45 % of the responses on the AMT were specific (Table 2). Furthermore, 12 % of the memories were general categoric and 30% were general extended.

Change scores were computed by subtracting pre intervention scores from post intervention scores. Subsequently, correlations were calculated for the DASS and the PSWQ change scores, and the AMT baseline scores. Significant correlations were retrieved for the

DASS-Anxiety change scores, with the number of specific memories provided ($r = .49, p = .009$) and general extended memories ($r = -.48, p = .01$). As such, the more specific memories and the less general extended memories a participant provided prior to course commencement, the larger the decrease of the score on the DASS-Anxiety scale at post intervention.

4. Discussion

The goal of this study was to determine whether differences in memory specificity are associated with the extent to which persons can benefit from a psychoeducational intervention for stress, anxiety and depression. Although there is already evidence for the overall effectiveness for psychoeducational group interventions for stress, anxiety, and depression (Cuijpers, Muñoz, Clarke, & Lewinsohn, 2009; Neil & Christensen, 2009; Van Daele, Van Audenhove, Hermans, Van den Bergh, 2011), little is known about participant characteristics that may influence course outcome at the individual level.

For autobiographical memory, on average almost half of the answers were specific in nature, but there was a certain amount of variability between participants. No overall significant changes were reported when looking at the effects of the psychoeducational intervention on problem solving strategies. When the relationship between the AMT and the change scores for the SAD-MEPS was considered however, some significant relationships were observed. More specifically, a high number of specific memories and/or a low level of general extended memories as measured by the AMT was found to predict an increase in the number of relevant means used in SAD-MEPS' problem solving tasks. One could assume that this relationship might be accounted for by changes in a communal third, for example executive functioning. In a study with depressed patients Raes et al. (2005) already found that when SAD-MEPS

effectiveness was regressed on rumination, memory specificity, and working memory functioning, memory specificity was the only significant predictor of MEPS effectiveness. Whether this also applies to the acquisition of problem-solving skills is not yet known and will require further research.

Looking at in self-reported complaints, a significant decline was found on all subscales of the DASS, indicating a short term beneficial effect of the psychoeducational course. Although these changes are positive, they are considered to be only temporary and unrelated to the process of acquiring long lasting problem solving skills, which in turn would lead to an actual, more permanent reduction of complaints. This is in line with findings of previous studies e.g. by White and Keenan (1990) and White, Keenan and Brooks (1992) and also with the current study not finding any correlations between changes in problem solving as measured by the SAD-MEPS and these short-term changes in complaints. Furthermore, there were only a limited number of significant correlations between the AMT baseline scores and the DASS- and PSWQ-change scores. The absence of this relationship might seem surprising given the research evidence on the predictive validity of the AMT for the course of depression, which was presented in the introduction. It is nevertheless plausible that the time between pre and post measurement is not sufficiently long enough to detect actual, long-lasting changes at the symptom level. This could explain the absence of these correlations.

As for other limitations: a first limitation the present study is its small sample size ($N = 23$), which limited the power of the statistical tests. A second limitation is that no follow-up data could be provided. It is expected that individuals would continue to apply the problem solving skills taught during psychoeducation to their own situations and therefore these would improve over time. Because this assumption is dependent on further skill acquisition, consolidation and

continued practice, it is uncertain which correlations could be expected when measured at a later point in time (e.g., six months after course completion). A third limitation is that no information was gathered on whether participants made clinical criteria for depression or if they were undergoing any treatment during the time of the intervention. A final limitation is the predominantly female composition of the study. Psychoeducational interventions nevertheless primarily attract women and a relatively higher proportion of women is associated with overall better results (Van Daele, Van Audenhove, Hermans, Van den Bergh, 2011). Therefore, having a primarily female composition does not make these findings less relevant for the target group.

Nonetheless, if subjected to replication, these findings may have important implications for the guidance and the setup of (psychoeducational) interventions that intend to transfer knowledge and skills to targeted groups. A first suggested step could be to setup an initial (self) screening of course participants by means of the AMT, in order to determine whether their memory specificity is sufficient to benefit from a psychoeducational intervention. This will of course require further research on the predictive capacities of the AMT, in order to determine what exactly corresponds with insufficient memory specificity (e.g. determine a cut-off score). A second, and even more important step, would be to subsequently provide memory specificity training to people with low memory specificity. This would enable them to maximize their potential and to benefit fully from a psychoeducational course.

Footnotes

¹ These correlations cannot be attributed to changes in a communal third, like symptoms. Partial correlations were calculated, controlling for the three DASS subscales and the PSWQ.

Furthermore, response behavior was controlled for using proportional indices and an analysis for outliers and subgroup samples was also conducted. Retrieved correlations remained significant.

Acknowledgments

The funding for this review was provided by the Policy Research Centre Welfare, Health and Family of the Flemish Government.

References

- Baddeley, A. D. (1988). But what the hell is it for? In M. M. Gruneberg, P. E. Morris, & R. N. Sykes (Eds.), *Practical aspects of memory: Current research and issues: Vol. 1: Memory in everyday life* (pp. 3–18). Chichester, England: Wiley.
- Borkovec, T.D. & Whisman, M.A. (1996). Psychosocial treatments for generalized anxiety disorder. In M. Mavissaklian & R.F. Prien (Eds). *Long-Term Treatment of Anxiety Disorders*. (pp 171-199).
- Brittlebank, A. D., Scott, J., Williams, J. M. G., & Ferrier, I. N. (1993). Autobiographical memory in depression: State or trait marker. *British Journal of Psychiatry*, *162*, 118–121.
- Neil, A.L. & Christensen, H. (2009). Efficacy and effectiveness of school-based prevention and early intervention programs for anxiety. *Clinical Psychology Review*, *29*, 208-215.
- Cuijpers, P., Muñoz, R.F., Clarke, G.N., & Lewinsohn, P.M. (2009). Psychoeducational treatment and prevention of depression: The “coping with depression” course thirty years later. *Clinical Psychology Review*, *29*, 449-458.
- de Beurs, E., Van Dyck, R., Marquenie, L. A., Lange, A., & Blonk, R.W.B. (2001). De DASS: een vragenlijst voor het meten van depressie, angst en stress. [The DASS: a questionnaire for measuring depression, anxiety and stress] *Gedragstherapie*, *34*, 35- 53.
- Evans, J., Williams, J. M. G., O’Loughlin, S., & Howells, K. (1992). Autobiographical memory and problem-solving strategies of parasuicide patients. *Psychological Medicine*, *22*, 399-405. doi:10.1017/S0033291700030348
- Fischler, G., Kendall, P., & Vye C. (1982). *Qualitative Scoring Procedure for Interpersonal Cognitive Problem-Solving (ICPS) Measures*. Minnesota, University of Minnesota.

- Gibbs, B. R., & Rude, S. S. (2004). Overgeneral Autobiographical Memory as Depression Vulnerability. *Cognitive Therapy and Research*, 28, 511-526.
- Goddart, L., Dritschel, B., & Burton, A. (1996). Role of Autobiographical Memory in Social Problem Solving and Depression. *Journal of Abnormal Psychology*, 105 (4), 609-616.
- Harvey, A. G., Bryant, R. A., & Dang, S. T. (1998). Autobiographical memory in Acute Stress Disorder. *Journal of Consulting and Clinical Psychology*, 66, 500-506.
- Hermans, D., Ruys, K., Vuerstaek, S., Van Daele, T., & Raes, F. (2007, November). Autobiographical memory specificity and the effects of a psycho-educational programme for stress and anxiety. *Paper presented at the 41st Annual Convention of the Association for Behavioral and Cognitive Therapies (ABCT)*, Philadelphia, USA.
- Littrell, J. (1998). Is The Reexperience of Painful Emotion Therapeutic? *Clinical Psychology Review*, 18(1), 71-102.
- Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales*. Sydney, Australia: The Psychology Foundation of Australia.
- Meyer, T. J., Miller, M. L., Metzger, R. L., & Borkovec, T. D. (1990). Development and validation of the Penn State Worry Questionnaire. *Behaviour Research and Therapy*, 28, 487-495. doi: 10.1016/0005-7967(90)90135-6
- Peeters, F., Wessel, I., Merckelbach, H., & Boon-Vermeeren, M. (2002). Autobiographical Memory Specificity and the Course of Major Depressive Disorder. *Comprehensive Psychiatry*, 43(5), 344-350.
- Platt, J. J., & Spivack, G. (1975). *Manual for the Means-Ends Problem-Solving procedure (MEPS): A measure of interpersonal problem-solving skill*. Philadelphia, Department of Mental Health Sciences, Hahnemann Medical College and Hospital.

- Pollock, L.R. & Williams, J.M.G. (2001). Effective Problem Solving in Suicide Attempters Depends on Specific Autobiographical Recall. *Suicide and Life-Threatening Behavior*, 31 (4), 386-396.
- Raes, F., Williams, J. M. G., & Hermans, D. (2009). Reducing cognitive vulnerability to depression: A preliminary evaluation of MEmory Specificity Training (MEST) in inpatients with depressive complaints. *Journal of Behavior Therapy and Experimental Psychiatry*, 40, 24-38.
- Raes, F., Hermans, D., Williams, J. M. G., Beyers, W., Brunfaut, E., & Eelen, P. (2006). Reduced autobiographical memory specificity and rumination in predicting the course of depression. *Journal of Abnormal Psychology*, 115, 699-704. doi: 10.1037/0021-843X.115.4.699
- Raes, F., Hermans, D., Williams, J. M. G., Demyttenaere, K., Sabbe, B., Pieters, G., & Eelen, P. (2005). Reduced specificity of autobiographical memories: A mediator between rumination and ineffective social problem-solving in major depression? *Journal of Affective Disorders*, 87, 331-335.
- Raes, F., Hermans, D., Williams, J. M. G., & Eelen, P. (2007). A sentence completion procedure as an alternative to the Autobiographical Memory Test for assessing overgeneral memory in non-clinical populations. *Memory*, 15, 495-507
- Raes, F., Sienaert, P., Demyttenaere, K., Peuskens, J., Williams, M., & Hermans, D. (2008). Overgeneral memory predicts stability of short-term outcome of ECT for Depression. *Journal of ECT*, 24, 81-83. doi:10.1097/YCT.0b013e31814da995

- Rijsoort, van, S. N., Vervaeke, G., & Emmelkamp, P. M. G. (1997). De Penn State Worry Questionnaire en de Worry Domains Questionnaire: Eerste resultaten in een normale Nederlandstalige populatie. *Gedragstherapie*, *30*, 121-128.
- Stice, E., Shaw, H., Bohon, C. Marti, C.N. & Rohde, P. (2009). A Meta-Analytic Review of Depression Prevention Programs for Children and Adolescents: Factors That Predict Magnitude of Intervention Effects. *Journal of Consulting and Clinical Psychology*, *77* (3), 486-503.
- Sumner, J. A., Griffith, J. W., & Mineka S. (2010). Overgeneral autobiographical memory as a predictor of the course of depression: A meta-analysis. *Behaviour Research and Therapy*, *48*, 614-625. doi:10.1016/j.brat.2010.03.013
- Van Daele, T., Hermans, D., Van Audenhove, C., & Van den Bergh, O. (2011). Stress Reduction Through Psychoeducation: a Meta-Analytic Review. *Health Education & Behavior*. Advance online publication. doi:, 10.1177/1090198111419202
- van Vreeswijk, M.F., de Wilde, E.J. (2004). Autobiographical memory specificity, psychopathology, depressed mood and the use of the Autobiographical memory Test: a meta-analysis. *Behaviour Research and Therapy*, *42*, 731-743.
- White, J. & Keenan, M. (1990). 'Stress Control': a pilot study of large group therapy for generalized anxiety disorder. *Behavioural and Cognitive Psychotherapy*, *26*, 133-141.
- White, J., Keenan, M., & Brooks, N. (1992). 'Stress Control': a controlled comparative investigation of large group therapy for generalized anxiety disorder: process of change. *Clinical Psychology an Psychotherapy*, *20*, 97-114.
- Williams, J. M. G. (1996). Depression and the specificity of autobiographical memory. In D.C. Rubin (Ed.), *Remembering our Past: Studies in Autobiographical memory*. Cambridge,

UK: Cambridge University Press.

Williams, J. M. G., Barnhofer, T., Crane, C., Hermans, D., Raes, F., Watkins, E., Dalgleish, T.

(2007). Autobiographical memory specificity and emotional disorder. *Psychological*

Bulletin, 133, 122-148. doi: 10.1037/0033-2909.133.1.122

Figure 1. Relationship between the AMT percentage of specific memories and the SADMEPS change score for number of means.

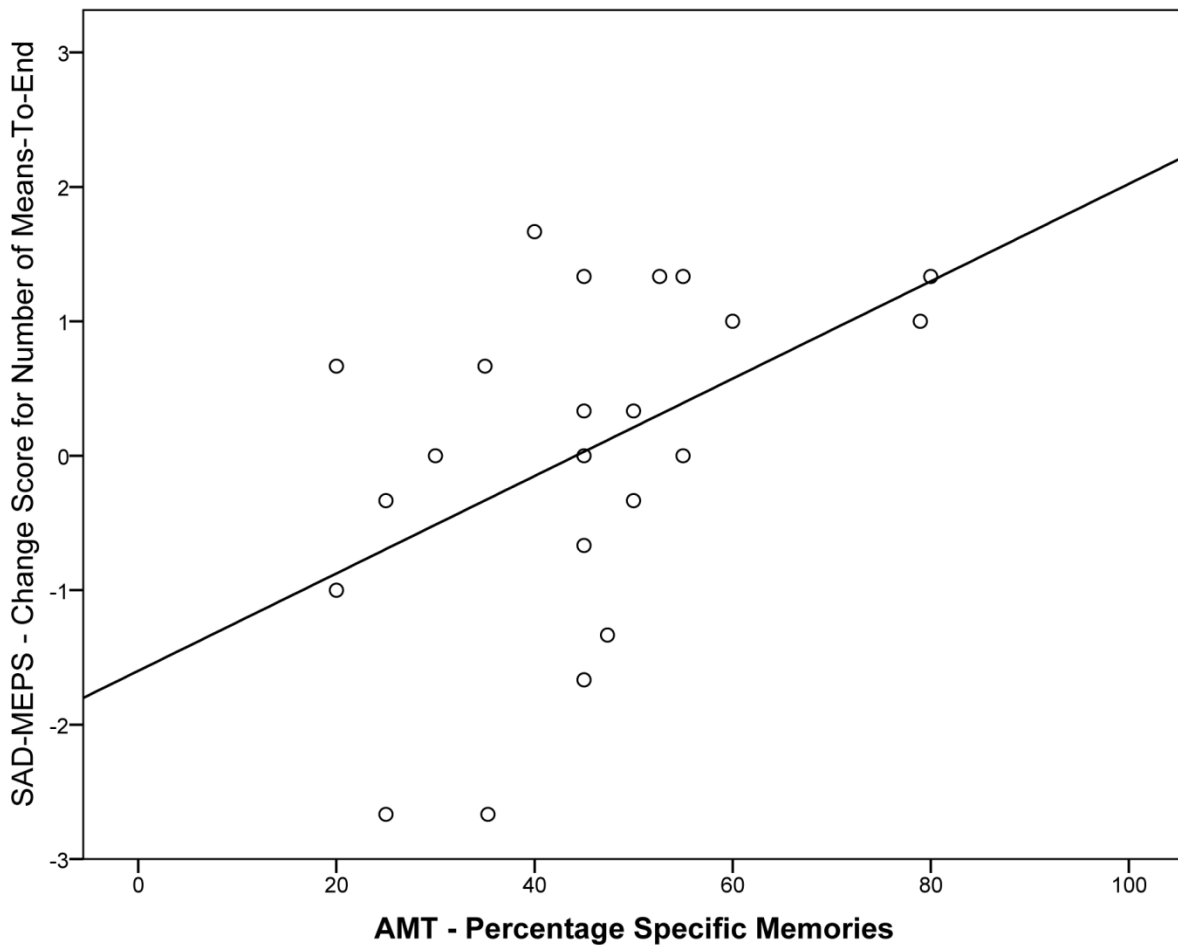


Table 1

Changes in self-reported complaints (n = 23) after course participation.

Beginscores	Time				t	p
	Before course		After course			
	M	SD	M	SD		
DASS						
Depression	11.48	7.80	7.35	7.98	3.69	.001
Anxiety	12.48	9.05	8.13	8.05	3.26	.004
Stress	18.61	10.72	13.65	8.57	3.07	.006
PSWQ	48.74	8.42	45.70	7.46	1.97	.061

Table 2

Means (Percentages) and Standard Deviations on the Different

Categories of the Autobiographical Memory Test (AMT) (n=23)

Response Category	M	SD	Range
Specific	8.87 (44%)	3.09	4 – 16
Specific Positive	4.61 (23%)	1.94	2 – 8
Specific Negative	4.26 (21%)	1.56	1 – 8
Categoric	2.39 (12%)	2.23	0 – 7
Extended	6.04 (30%)	2.55	2 – 10
Same Event	0.17 (1%)	0.49	0 – 2
No memory	2.26 (11%)	1.94	0 – 8
No response	0.26 (1 %)	0.69	0 – 3