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Predictors of Treatment Outcome in Elders with Depression Symptoms

A secondary analysis concerning the Dutch 'Coping with Depression' course.

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Abstract

Purpose: This study explored coping styles, number of previous depressive episodes, degree of social support, gender, age and years of education as predictors of the immediate effect of the Coping with Depression course for Dutch elders with depression symptoms.

Method: 263 participants (age 55–85; 71% women) took part in this secondary analysis on the study by Haringsma et al. (2005). At pre-treatment data was gathered on the prognostic factors. Depression symptoms (CES-D scores) were measured at pre-treatment and post-treatment as indicator of the treatment outcome. Multiple tests were used to examine the relations between predictors and the treatment outcome.

Results and conclusion: The results indicated that Dutch older men with depression symptoms used less active problem solving, more palliative reaction, more avoidance and more passive reaction pattern than younger healthy men. Dutch older women with depression symptoms used less active problem solving, less expression of emotions, less comforting cognitions and more passive reaction pattern than younger healthy women. Contrary to the expectations of this study all the proposed prognostic variables were not significant. Since it is important to provide treatments that are effective for many different kinds of people, it could be helpful to do more research about the effectiveness of treatments which focusses on different types of client characteristics. Especially for the treatment of depressive elders with the CWD course it could be good to consider enhancing their social support and to enhance their ways of effective coping since they generally use less active problem solving.

Preface

During my search for an interesting thesis topic I was immediately drawn towards the practical relevance of Dr. Rimke Haringsma dissertation about depression amongst the elderly. The elderly, with their lifelong experience and the ways they cope with the difficulties of life, interests me. Because Dr. Haringsma's provided me the use of her dataset it was possible for me to ponder on the data on Dutch elders concerning the Coping With Depression course. After reading Dr. Haringsma's studies about the CWD course I noticed that the course by Lewinsohn was not effective for all elders in these studies. Some had much more symptoms after following the course or had a low insignificant decrease in symptoms. I thought about reasons these elders did not gain treatment benefit where others did. This question encouraged me to further analyze this difference in treatment outcome. Understanding which factors could have an influence on one's treatment benefit is of great therapeutic relevance to me. As a future psychologist, I therefore enjoyed doing research about possible predictors, as it informed me about certain patient characteristics which need to be addressed in order for me to effectively support these patients. Even though the findings in this study are not very much generalizable, writing this thesis was a personal valuable learning experience.

I therefore am very grateful for all the practical feedback Dr. Haringsma gave me in writing my thesis, and all the many lessons I have learned from her.

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Introduction

The older segment of the Dutch population is growing both in numbers as well in percentage of the total population. It is estimated that by the year 2040 there will be approximately 4,7 million people over 65 years of age, which will be 26% of the total Dutch population (Centraal Bureau voor de Statistiek, 2015). With this growth, the social and economic costs of mental illness among the elderly have increased proportionality. Amongst these illnesses, depression is one of the most detrimental.

In a population-based cohort study about late-life depression Smit, Ederveen, Cuijpers, Deeg, and Beekman (2006) found that 16% of all elders between ages 55 and 85 years have clinically relevant late-life depression. Depression amongst elders is associated with significant societal costs through its unfavourable prognosis and disease burden. Furthermore, according to a prospective community-based study by Beekman et al. (2002) depression symptoms amongst Dutch elders have considerable impact on their quality of life and wellbeing. From a public health point of view depression prevention and treatment in late-life may be an attractive, if not important, means to improve health of the elderly population and to reduce future health costs.

The community-based mental health care system in the Netherlands already provides the Dutch version of the Coping with Depression (CWD) course. It is adapted for elderly people based on the Lewinsohn's CWD course (Cuijpers, 1998b; Lewinsohn, Antonucci, Breckenridge, & Teri, 1984). Originated in the United States and implemented during the 80's in the Netherlands, it proved to be an effective treatment and prevention program for unipolar depression. The CWD course is based on Bandura's social learning theory (1971), which states depression is associated with a decrease in pleasant and an increase in unpleasant person-environment interactions. The course's objectives therefore are to increase pleasant experiences by improving social skills, constructive thinking and relaxation skills, and to learn how to maintain treatment gains (Lewinsohn et al., 1984). Haringsma, Engels, Cuijpers, and Spinhoven (2005) examined the effectiveness of the CWD course for older adults (55 – 85 years of age) with depression symptoms varying from subclinical depression symptoms to major depression symptoms (N = 110). The vast majority of participants (69%) had a lifetime major depressive disorder (MDD), and 39% of the participants met the criteria for a MDD at the start of the CWD course. This makes them hard to cure with a considerable 'light' intervention such as the CWD course. A decrease in depressive symptomatology was

therefore the desired outcome in both the intervention group and waiting-list-control group. Haringsma et al. (2005) found that this Dutch version of the CWD course was effective for elderly participants with mild-to-severe depression. However, after the course 62% of the previously depressed elders in the intervention condition still showed symptoms of a clinically relevant depression (i.e. CES-D scores ≥ 16). Amongst these 62% of still depressed elders 39 participants (60%) showed an increase in symptoms or low symptom reduction (improved less than 8.6 points on the CES-D; 8.6 is the reliable change score in this sample) (Haringsma et al., 2005). The other 26 participants (40%) were still depressed but had gained a reliable symptom reduction (improved more than 8.6 points on the CES-D). This variation in outcome of the CWD course merits the further examination of client factors that could account for the course's degree of effectiveness for certain elders. Are there client factors that predict the course of change in depression symptoms directly after following the CWD course? Haringsma, Engels, van der Leeden, and Spinhoven (2006) already thoroughly examined many predictors of response to the CWD course. Because coping styles of elders and their relationships with the treatment outcome was not examined in many descriptive details, this study decided to further explore coping in the elderly and their response to the CWD course. More knowledge about coping and other possible predictors for the treatment outcome of the CWD course could be helpful to ensure a better triage of the depressed elders into the most suitable intervention.

1.1 Predictors of depression symptoms

During the CWD course learning to use effective ways of coping was not part of the course's learning objectives, besides gaining relaxation skills. Therefore, maybe one's maladaptive coping behaviour could interfere with one's newly learned skills. This interference could maybe result in a lower treatment outcome than others who do not so much experience this interference of maladaptive old behaviour. Further consideration of this possible first predictor begins in the next subparagraph.

1.1.1 Coping styles

It is widely known that the type of coping strategy used is contributing to more or less psychological adjustment and physical health (Taylor & Stanton, 2007). Coping behaviour in general is divided in effective and ineffective coping styles. According to Schreurs, van de

Willige, Brosschot, Tellegen, and Graus (1993) there are seven coping styles; ‘active problem solving’, ‘seeking social support’ and ‘comforting cognitions’, as well as ‘passive reaction pattern’, ‘expressing emotions’, ‘palliative reaction’ and ‘avoidance’. Whether a type of coping is effective (it helps to reduce stress and facilitates problem-solving) is determined by the situation’s demands and possibilities. Palliative reaction or avoidance can bring relieve when one cannot change a situation or problem. Active problem solving, on the other hand, can maintain stress in this unresolvable situation, because efforts to resolve the problem are in vain. When a problem demands a solution, avoidance in this case maintains the stress accompanied by the problem. Therefore, it is important for one’s mental health to possess as much coping strategies as possible in order to react in the best appropriate manner. However, most people prefer one or several coping styles (Schreurs et al., 1993). Thus, the subdivision of ineffective and effective coping style is based on the long-term effectiveness of the most frequently used coping style in different situations. For each of the preferably used coping styles the degree of general effectiveness on the long term is as follows.

The following coping styles are generally effective. Problem solving is an active form of resolving one’s problem that is causing the stress/negative feelings. Because time and effort are invested in reflection and solving the problem it is generally an effective way of coping in the long run. Furthermore, active problem solving as a form of proactive coping is related to less prevalence of depression in the elderly (Greenglass, Fiksenbaum, & Eaton, 2006). Seeking-social-support is an active form of resolving one’s problems by seeking out the help or company of others and talking with them about the problem and one’s feelings. This is generally an effective way of coping, because it relieves stress and is helpful for finding solutions for problems via the support of others (Schreurs et al, 1993). Optimism includes dealing with stress by generating more helping and comforting thoughts. Generally, optimism helps to reduce stress. In this way, it creates room for thinking about solutions (Schreurs et al., 1993). Optimism is related with fewer symptoms of depression in elders (Bjørkløf, Engedal, Selbæk, Kouwenhoven, & Helvik, 2013).

The following coping styles are generally ineffective. Passive reaction pattern is characterized by mentally absorbing the problem and stress while one is not doing anything to solve the problem or to deal with the stress. There is little emotion regulation and no problem solving (Schreurs et al, 1993). Therefore, passive reaction pattern is an ineffective coping style. Expressing-emotions i.e., ‘‘venting’’, is showing your irritations or anger towards (non-)involved others. This type of coping is not effective, because it boosts ruminative negative

thinking, does not resolve the problem, does not relieve stress, and is associated with having more depression symptoms (Jaspers, van Asma, & van den Bosch, 1989). Palliative reaction i.e., sedation, is distracting oneself from negative feelings with reinforcing stimuli, like alcohol, drugs or food. People with palliative reaction as a way of coping are more likely to develop addictions. Moreover, palliative-reaction-pattern is an ineffective coping style because it does not address the problem and is associated with depression (Orzechowska, Zajączkowska, Talarowska, & Gałecki, 2013). Avoidance coping strategies include not dealing with a situation by keeping away from it or ignoring it. This type of coping is not effective because it does not resolve the problem and can even exacerbate the negative effects of stress. Furthermore, it is associated with having more current depression symptoms and is a predictor of future depression (Jaspers, et al., 1989; Rohde, Lewinsohn, Tilson, & Seeley, 1990).

To further understand the relationship between ways of coping and depression, Wei, Heppner, Russell and Young (2006) carried out a prospective study amongst American students in which they presumed ineffective coping and maladaptive perfectionism were mediating the relationship between attachment and depression. They measured ineffective coping, maladaptive perfectionism and depression symptoms at two points in time. It seemed that ineffective coping and maladaptive perfectionism predict depression and that ineffective coping contributes to more depression symptoms. The hypothesised working mechanism behind this is that ineffective coping mechanisms are counterproductive because in short term or in long term they enhance the stress (Wei, et al., 2006). Enhancing stress means enhancing unpleasant experiences since problems are not resolved or new problems arise and more depression symptoms are the result of this. Minimizing stress on the other hand enhances pleasant experiences since stress is resolved faster. Thus, when ineffective coping persists and keeps on increasing unpleasant experiences it could counteract the working mechanisms of the CWD-course (i.e., increase pleasant activities). Maybe elderly people who use ineffective coping styles, in comparison to elders with more effective coping styles, are less able to minimise and prevent stressful situations and therefore could have more experiences that are unpleasant in the ratio of pleasant/unpleasant experiences. Maybe this could be an explanation why some elders in this study retain, or gain more, depression symptoms even after following a depression intervention that aims to enhance the frequency of pleasant activities.

In conclusion, it seems that the four ‘ineffective’ coping styles (passive reaction pattern, expressing emotions, palliative reaction and avoidance) could be related to more

depression symptoms. The ‘effective’ coping styles (active problem solving, seeking social support and optimism) seem to be related to less depression symptoms. Possibly, since coping is not addressed in the CWD course, coping could also be related to treatment outcome. Treatment outcome is an interaction between working mechanisms of the treatment which are intended to reduce symptoms and personal characteristics that could increase symptoms of depression.

1.1.2 Number of previous depressive episodes

Besides coping there are other client characteristics that could negatively influence the treatment outcome. Considering the fact that depression is often an episodic disorder with periods of remission and exacerbation (Taylor, Walters, Vittengl, Krebaum, & Jarrett, 2010), maybe the number of previous depressive episodes plays a role in the tenaciousness of one’s depression. In the study by Haringsma, et al. (2006) the correlation between the number of previous episodes and the amount of symptom reduction over 14 months after the CWD course was examined. They concluded that fewer previous depressive episodes predicted a larger treatment benefit for the depressed elders. Furthermore, previous depressive episodes leave a residual of symptoms which form a high risk for developing a new depressive episode, i.e., relapse (Paykel, 2008). This residual of symptoms from previous depressive episodes could be present during one’s start of the CWD course. Therefore, it seems that the number of previous depressive episodes should be regarded as a predictor that influences the number of symptoms at pre-treatment and post-treatment, as well as the treatment benefit itself.

1.1.3 Social support

Social support is generally defined as the availability of people on whom one can rely and from whom one can experience care, value and love. Social support can be measured as the perception that one has assistance available, receives actual assistance, or is integrated in a social network. Social support has four subtypes: emotional, instrumental, appraisal and informational support (Sarason, Sarason, & Pierce, 1990). Emotional social support, for example intimate ties with a friend, partner and/or with children, is considered as having a protective effect against the risk of depression (Kessler & McLeod, 1985). However, with increasing age elders often grow more isolated. This happens because they more frequently lose friends and loved ones, and at a higher age and declining health many elders lose mobility and independence (Nationaal Ouderen Fonds, 2016). Consequently, these changes

make it harder for elders to keep in touch with friends and family. Inadequate social support has shown to negatively influence the benefit one can have from a cognitive-behavioural treatment for depression. A study by Goodwin et al. (2012) explored social support as a predictor of low depressive symptom reduction in palliative care patients with any depressive syndrome (median age was 71 years). Seventy-six participants were initially assessed on referral to a palliative care service in South London, UK, and again assessed at a 4-week follow-up. The outcome measure was remission ($N = 39$) or non-remission ($N = 37$) of depression by time of the follow-up. The findings showed that reporting low social support at time of referral was the most powerful risk factor for non-remission of depression symptoms.

A very large study (N = 2,823) amongst Dutch elders confirms the risk for depression symptoms in elders with low social support. Sonnenberg, et al. (2013) investigated the relation between social support and depression in a population-based sample aged 55–85 years. This Longitudinal Aging Study in Amsterdam had a 13-year follow-up with data on the onset of depression. They found that low social support (no partner in the household, small network and low emotional support) and a high need for affiliation were related to depression in later life. They also found gender differences for the relationship between social support and depression. In the next paragraph this study will be further discussed.

1.1.4 Gender

The prevalence of depression is twice as high in women as in men, also in older adults (Kessler, 2006). However, findings by Sonnenberg et al. (2013) showed that lack of a partner in the household and having a small network predicted onset of depression in men but not in women. A high need for affiliation was associated with depression in women but not in men. In respondents with both a high affiliation need and low social support depression rates were higher, with men being more often depressed than women are. Together with the fact that depression is more prevalent amongst women, it seems that men however are more vulnerable to develop depression symptoms when they receive low social support.

The CWD-course does emphasize on strengthening one's social skills, and facilitates a small amount of social support by getting people together during the CWD course and having a supportive therapist conducting the course. However, it may be possible that the social support facilitated through the course is not enough and that the risk of depression symptoms accompanied by low social support can still account for part of one's treatment outcome. This gives reason to control for Gender *x* Social Support interaction in relation to the treatment

outcome in this study and to check if men with low social support have more depression symptoms than women with low social support.

1.1.5 Age

Chui, Gerstorf, Hoppmann, and Luszcz (2015) examined age and gender related trajectories in depression symptoms from young-old (65+ years of age) to old-oldest (90+ years of age). Findings of their 15-year Australian Longitudinal Study of Ageing (Baseline N = 2,087; M age = 78.69 years; *range* = 65-103 years; 49.40% women) showed that depression symptoms increased with age. Also, there was a significant Gender *x* Age interaction in the relation with depression symptoms. This interaction indicated that the gender gap in depression symptoms (more women than men are depressed) reduced from young-old to old-old (80+ years of age) and reversed in very old age (90+ years of age) when men showed more depression symptoms than women. Conclusively, women under 80 still suffer from more depression symptoms than men, but above that age men with increasing age experience more depression symptoms than women. Since the sample in the current study does not exceed the age of 85 years it is possible that women still experience more depression symptoms than man. This gives reason to control for Gender *x* Age interaction in relation to the treatment outcome in this study.

1.1.6 Education

Another factor that could contribute to the treatment outcome is education. In the study by Haringsma et al. (2006) education was examined as a possible predictor of response to the CWD course. Haringsma et al. (2006) found that education was significantly contributing to the average improvement rate. More education was associated with more treatment benefit. Because this study incorporates the same participants as the study by Haringsma et al. (2006) it is important to include education as a possible predictor for treatment outcome in this study sample.

1.2 Current study

This study examined the differences in treatment outcome of the participants following the CWD course and possible predictors of that difference. Before it is possible to make meaningful statements, it is important to answer the first question: how could coping

behaviour of Dutch elders be described when interpreting their coping score by comparison with a non-clinical norm group?

The other research questions concerned the characteristics of the course participants that may predict treatment outcome are as follows. The second question is: Do ineffective and effective coping styles predict treatment outcome? The third question is: Does the number of depressive episodes predict treatment outcome? The fourth question is: Does the degree of social support predict treatment outcome? The fifth question is: Does gender predict the treatment outcome? The sixth question is: Does age predict the treatment outcome? The seventh question is: Does educational level predict the treatment outcome? The eight question is: Could all presumed independent variables be predictors of treatment outcome in a regression analysis?

The following six hypotheses were formulated based on the literature mentioned above. Hypothesis 1: Dutch elders with depression symptoms use different coping styles than their non-clinical norm group. Hypothesis 2: The four 'ineffective' coping styles are related to an increase of depression symptoms, and the three 'effective' coping styles are related to a decrease in depression symptoms. Hypothesis 3: Number of previous depressive episodes is positively related to an increase of depression symptoms. Hypothesis 4: Social support is related to a decrease in depression symptoms. Hypothesis 5.1: Men with low social support (Gender *x* Social Support) are expected to have a lower decrease in depression symptoms than women with low social support. Hypothesis 5.2: Women between 55 and 85 (Gender *x* Age) are expected to have more depression symptoms than men in this age range. Hypothesis 6: Age is related to an increase in depression symptoms. Hypothesis 7: Education is related to a decrease in depression symptoms. Hypothesis 8: All the previous independent variables are predictors of treatment outcome.

2. Methods

2.1 Design

This study made secondary analyses on the data gathered by Haringsma et al. (2005) between the years 2000 and 2003 following the CWD course.

2.2 Sample

The 263 individuals in this study were a selected part of the 358 Dutch elders taking part in the CWD courses during the years 2000 and 2001. In the study by Haringsma et al. (2005), there were 13 groups of participants following the CWD course by 10 Community Mental Health Centres. These Mental Health Centres were both urban and rural, and from all the regions in the Netherlands. Participants were recruited by self-referral by means of elders responding to media announcements of the CWD course. Accepted in this study were older adults (minimum age 55 years) with current or a history of depression symptoms. Exclusion criteria were cognitive impairment, current bipolar disorder, schizophrenia, acute substance disorder, recent bereavement, hearing impairment, insufficient command of the Dutch language and receiving another form of psychotherapy. However, psychotropic medication was accepted. All CWD participants had been provided with a complete description of the study, and written informed consent was obtained before enrolment in the study. Participation in the study was voluntary. Therefore, not everyone who followed the CWD course participated in the study. There was no reward for participants included in the study. Of all the 358 initial participants of the CWD course, 95 participants were excluded from this study due to missing 1 or more sessions during the CWD course, incomplete data on one or more variables relevant to this study or being too young of age. The remaining 263 participants for this study all followed the 10 sessions of the CWD course and were predominantly female (187 females, 76 males) with an average age of 65 years (*SD* = 7.2 years, *range* = 55 to 85 years). Most of them lived with their partners and/or children (53%), 47% of elders lived alone. The large majority was born in the Netherlands (91%). In contrast to the RCT by Haringsma et al. (2005) all participants were included after completing the CWD course, despite their allocation into the intervention condition or waiting-list-control condition. Therefore, not all participants included in this study received the CWD course at the same time.

2.3 Procedure

The CWD course consisted of 10 weekly sessions of 2 hours each in groups of six to thirteen participants following the CWD protocol. The Coping with Depression course was a highly structured psychoeducational treatment modality for unipolar depression. The instructors of

the courses were two health care professionals trained in conducting this course (Haringsma et al., 2005). For further details on the procedure see the article by Haringsma et al. (2005).

2.4 Instruments

Data on depression symptoms, coping style, previous depressive episodes, social support, gender, age and education were gathered pre- and post-treatment via structured interviews or self-report questionnaires that were completed at home. If questions were skipped, participants were called by the researchers and missing answers were filled in by telephone.

2.4.1 Centre for Epidemiological Studies Depression Scale

The severity for depression symptoms was measured by the Dutch version of the CES-D, a self-report questionnaire for measuring depression symptoms experienced during the past week with 20 items (Bouma et al., 1995; Radloff, 1977). There is a four-point answering scale starting from value 1 ‘never or seldom’, and following with value 2 ‘sometimes or very little’ value 3 ‘regularly’ to value 4 ‘mostly or always’. The total scores range from 0 to 60. A score of ≥16 indicates the presence of clinically relevant depression (Beekman, Deeg, Braam, & De Vries, 1997). Scores beneath 16 are in the subclinical range. The psychometric properties are generally good, with Cronbach’s α ranging from .80 to .90 in the normative sample of Dutch older adults by Beekman, Van Limbeek, Deeg, Wouters, and Van Tilburg (1994). Because of the absence of physical symptoms of depression, the questionnaire is considered very appropriate for elders (Beekman et al., 1994; Lewinsohn et al., 1997; Radloff and Teri, 1986). The internal consistency of the CES-D in the current sample is α = .84 at pre-treatment (N = 241).

2.4.2 ‘Utrecht’ Coping List

The UCL is a Dutch self-report questionnaire that measures seven types of coping with 47 items (Schreurs et al., 1993). There is a four-point answering scale starting from value 1 ‘never’, and following with value 2 ‘sometimes’, value 3 ‘regularly’ to value 4 ‘very often’. The total score for each scale is different since the seven scales have different numbers of items. The mean score for each scale are comparable because the total score for one scale is divided by its number of items and are interpretable via the answering scale.

The coping styles of Dutch elders with psychosocial problems (age 54 to 92 years, N = 27), are measured with the following scales and internal consistencies: active-problem-solving

(α = .67), palliative-responses (α = .64), avoidance-strategies (α = .73), seeking-social-support (α =.80), passive-reaction-pattern (α = .43), expressing-emotions (α = .74) and comforting-cognitions (α = .66) (Schreurs et al., 1993).

In the current study the internal consistencies of the coping scales (with *N* ranging from 258 to 263) were higher for active-problem-solving (α = .80), palliative-responses (α = .66), avoidance-strategies (α = .77), seeking-social-support
(α = .87), passive-reaction-pattern (α = .62) and comforting-cognitions (α = .68). The internal consistency was lower for the expressing-emotions scale (α = .65).

In order to interpret the UCL scores, Schreurs et al. (1993) composed norm groups of different samples of Dutch people and their mean scores on the. The most fitting norm groups were samples of younger males between the age of 55 and 65 years and younger females between the age of 45 and 65 years. The sample of participants to be split into females and males in order to compare their UCL scores with the norm groups for non-clinical males and females given by Schreurs et al. (1993).

2.4.3 Social Support List-Interaction

Social support was assessed with the abbreviated version of the Social Support List—Interaction (SSL12-I), which is intended for self-report use by Dutch elders (Kempen & van Eijk, 1995). The SSL12-I consists of 12 items divided into three subscales with four items each: everyday support, social support in problem situations and esteem support. There is a five-point answering scale starting from value 1 ‘never’, and following with value 2 ‘sometimes’, value 3 ‘regularly’ to value 4 ‘very often’ and a neutral value ‘I don’t know’. For practical reasons, there was a 13th question added to the list that asks ‘‘is there someone with whom you can talk with in confidentiality?’’ / in Dutch; ‘‘heeft u iemand die u beschouwt als een vertrouwenspersoon?’’. The total score of all the twelve items was used to measure social support. The sum of scores on all the twelve items in the current study had a Cronbach’s α of .84 (*N* = 260), which is comparable to the reliability of the SSL12-I in the normative sample (α = .83) given by Kempen and van Eijk (1995). The normative sample were Dutch elders between the ages of 57 to 99 (mean age is 69.6 years). The majority of the normative sample was female (56.2%) and married or living together as a couple (67.2%).

2.5 Statistical analysis

Data were analysed with SPSS version 23. Quantitative descriptive statistics were reported as frequencies, and the continuous data as means with standard deviations. In order to analyse the increase or decrease in depression symptoms at post-treatment (t1) after following the CWD course, the Raw Treatment Outcome Score (RTOS = $CES\text{-}D_{t1} - CES\text{-}D_{t0}$) was calculated. A dichotomous version of the RTOS indicated a decrease in depression symptoms if RTOS was below the significant change score $\geq$ -8.6, and an increase in depression symptoms if RTOS was above the significant change score $\leq$ 8.6. Scores in-between these levels are not considered to be indicative of increase or decrease in symptoms. Furthermore, in order to analyse the relation between predictors and treatment outcome, the Treatment Outcome Score (TOS) was formed in order to correct for the influence of CES-D scores at pre-treatment on the RTOS. The TOS was formed by calculating the standardized residuals from the regression analysis where pre-treatment scores predict the raw absolute treatment outcome. A positive TOS means an increase in depression symptoms. A negative TOS means a decrease in depression symptoms. The TOS was used as indicator of one's treatment benefit, and will be integrated in the regression analysis.

The relationships between a possible predictor and TOS were calculated with Pearson's Correlation *r,* Spearman's *rho*, Pearson's Chi-Square X^2 and One-Way ANOVA. Possible interaction between Gender *x* Social Support on the TOS was measured with Mann-Whitney *U*-test, *T*-tests and Analysis of Variance. Possible interaction between Gender *x* Age on the TOS was measured with Pearson's Correlation *r*, *T*-test, Mann-Whitney *U*-test and Analysis of Variance. The significant relationships between types of coping, number of depressive episodes, social support, gender, age, education and TOS were analysed together with stepwise Multiple Regression Analysis. In order to control for the hypothesised influence of gender in the relation between social support, coping, age and treatment outcome a separate Multiple Regression Analysis (MRA) for females and males was made.

Preliminary analyses for executing a MRA included checks for linearity, normality, homoscedastic combinations of variables and multicollinearity. Results are considered statistically significant if $p < 0.05$ for the Pearson's correlations. For the regression analysis results are considered statistically significant if $p < 0.0045$ after Bonferroni corrections for the overall MRA and $p < 0.005$ for 10 independent variables in the separate MRA's for women and men. For the *t*-tests concerning the seven coping styles results are considered statistically significant if $p < 0.007$ after Bonferroni corrections. Analyses are tested two-sided.

3. Results

3.1 General patient characteristics

At pre-treatment, the mean score on the CES-D was 25.07 (*SD* = 9.64*; range* = 0 to 52). Eighteen percent of the Dutch elders had depression symptoms within the subclinical range and 82% had depression symptoms of clinical relevance according to the CES-D scores before the start of the CWD course. At post-treatment, 44% of all participants had depression symptoms within the subclinical range and 56.3% had depression symptoms within the clinical range ($M_{post\text{-}treatment}$ = 18.36, *SD* = 10.05, *range* = 0 to 53), meaning the group of people with subclinical symptoms had expanded and the group of people with symptoms of clinical significance has reduced. Almost half of the Dutch elders (48.3%) were not on medication. Overall, the characteristics of patients were highly mixed in this sample – see Table 1.

3.2 Treatment Outcome

The range of the Raw Treatment Outcome Scores (RTOS) in this sample lies between 22 and -36. This means that some have gained 22 symptom points on the CES-D, and others have lost 36 symptom points. Most of the elders (74.1%) had a low RTOS i.e., decrease in symptoms at post-treatment (RTOS ranging from -1 to -36) and 43.7% of elders had a significant symptom change towards improvement (RTOS ranging from -8.6 to -36). One-fourth of the elders (25.9%) did not significantly change in number of depression symptoms or had an increase in depression symptoms (RTOS ranging from -8.5 to 22).

The distribution of the RTOS seemed to be close to normal. Furthermore, the median and mean of the raw treatment outcome are very much alike (M_{RTOS} = 6.70, Mdn_{RTOS} = 7.00, *SD* = 9.82) but a slight right skewness was present. As discussed in the Methods section there was indeed a relation between CES-D scores at pre-treatment ($CES\text{-}D_{t0}$) and the Raw Treatment Outcome Score (RTOS) (r = -.467, p = <.001), meaning people with many depressive symptoms at pre-treatment had more symptom decrease. Regression Analysis confirmed that people with a high $CES\text{-}D_{t0}$ had more 'room for improvement' and therefore had a higher chance at symptom decrease (R^2 = .218, β = -.467, B_i = -.467, p = <.001).

Table 1 – General Characteristics

N	263
Civil states	
Married/living together	131 (49.8%)
Single/divorced/widowed	132 (50.2%)
Education*	
Lower education	161 (61.2%)
Higher education	99 (37.6%)
Education otherwise	3 (1.1%)
Medication	
Antidepressants	52 (19.8%)
Tranquilizers	44 (16.7%)
Antidepressants + Tranquilizers	27 (10.3%)
Other combinations	3 (1,1 %)
Suicidal risk	
Low risk	70 (26.6%)
Medium risk	12 (4.6%)
High risk	13 (4.9%)
CES-D score at pre-treatment**	
Subclinical range	47 (17.9%)
Clinical range	216 (82.1%)
Mental Disorder ***	
Dysthymia	21 (8%)
MDD	13 (50%, *N* = 26)
Mood dis. with psychotic. symp.	2 (0.8%)
PTSD	11 (4.2%)
GAD	48 (18.3%)
OCD	5 (1.9%)
Social Phobia	30 (11.4%)
Agora Phobia without panic dis.	36 (13.7%)
Agora Phobia with panic dis.	15 (5.7%)
Panic Disorder	14 (5.3%)
Hypomania or Mania	8 (3.0%)
Alcohol or Drugs addiction	15 (5.7%)
Psychotic disorder	5 (1.9%)
Bulimia Nervosa	5 (1.9%)

*Note; * Lower education is ≤ 10 years of formal education. Higher education is ≥ 11 years of formal education. ** A CES-D score of ≥16 indicates the presence of clinically relevant depression and are in the clinical range. Scores beneath 16 are in the subclinical range and indicates an absence of clinically relevant depression. *** More than one disorder possible per patient.*

3.3 Independent variables

In this paragraph the independent variables were examined by quantity, quality and their individual relationship with the TOS.

3.3.1 Coping styles

In order to analyse which coping styles elders frequently used, the scores on the UCL questionnaire were examined. For each patient, only the coping styles with a scale mean total

score of 2.5 or higher (which lies between 'sometimes' and 'often') were considered to be indicative of frequent use. The three most frequently used coping styles at pre-treatment were comforting cognitions (36%), passive reaction pattern (33.1%) and active problem solving (30.4%) – see Table 2.

Table 2 – Use of coping styles with mean scale scores ≥ 2,5

Sample *x* Coping style	Frequencies	Range	*M*	*SD*
Coping styles				
Expressing Emotions (*N* = 262)	45 (17.2%)	1.00-4.00	1.96	0.61
Palliative reaction (*N* = 261)	50 (19.1%)	1.00-3.63	2.20	0.42
Avoidance (*N* = 258)	49 (19.2%)	1.00-3.63	2.13	0.50
Passive reaction pattern (*N* = 260)	86 (33.1%)	1.14-3.71	2.28	0.48
Active Problem Solving (*N* = 260)	79 (30.4%)	1.00-4.00	2.23	0.50
Comforting cognitions (*N* = 260)	94 (36.3%)	1.00-3.40	2.32	0.49
Seeking social support (*N* = 261)	39 (14.9%)	1.00-3.83	1.95	0.61

By comparing the current sample with these norm groups, it appeared that Dutch elderly males with depression symptoms used less active problem solving, more palliative reaction, more avoidance and more passive reaction pattern than the younger males in their norm group – see Table 3.1. For the Dutch elderly women with depression symptoms it appeared that they used less active problem solving, less expression of emotions, less comforting cognitions and more passive reaction pattern in comparison of their younger norm group – see Table 3.2.

Table 3.1 – Men UCL total scores compared with norm group

	Study sample	**Norm group**	***T (df)***	***P***
Coping styles	*M (SD)*	*M (SD)*		
Active Problem Solving	**15.6 (3.5)**	18.4 (3.7)	*T* (74) = -5.91	< .001*
Palliative Reaction	**17.0 (3.2)**	15.5 (3.7)	*T* (75) = 3.39	< .001*
Avoidance	**17.5 (3.7)**	14.7 (3.3)	*T* (75) = 5.65	< .001*
Seeking social support	11.1 (3.2)	11.1 (2.9)	*T* (74) = -0.24	.811
Passive reaction pattern	**16.1 (3.6)**	10.6 (3.0)	*T* (75) = 11.99	< .001*
Expressing emotions	5.9 (1.7)	6.3 (1.6)	*T* (75) = -1.80	.074
Comforting cognitions	11.5 (2.2)	11.5 (2.5)	*T* (75) = 0.0	>.999

*Note; * Significant difference.* ** *T*-tests are independent for unequal variances. Study sample consisted of 75 to 76 men aged 55 – 88 years. Norm group consisted of 225 male members of the nation railway company 'NS' aged 55 - 65 years.

Table 3.2 – Women UCL total scores compared with norm group

	Study sample	**Norm group**	*T (df)*	*P*
Coping styles	*M (SD)*	*M (SD)*		
Active Problem Solving	**15.9 (3.6)**	18.9 (7.2)	*T* (184) = -4.03	< .001*
Palliative Reaction	17.8 (3.4)	17.8 (8.5)	*T* (184) = 0.00	> .999
Avoidance	16.9 (4.1)	16.0 (8.6)	*T* (181) = 1.02	.311
Seeking social support	11.9 (3.8)	13.1 (6.7)	*T* (185) = -1.70	.091
Passive reaction pattern	**15.9 (3.3)**	11.6 (8.0)	*T* (183) = 5.30	< .001*
Expressing emotions	**5.9 (1.9)**	6.8 (3.6)	*T* (185) = -2.40	.018*
Comforting cognitions	**11.7 (2.6)**	13.2 (5.2)	*T* (183) = -2.79	.006*

*Note; * Significant difference. ** T-tests are independent for unequal variances.* Study sample consisted of 182 to 186 women aged 55 – 82 years. Norm group consisted of 107 female Dutch nurses aged 45 - 65 years.

After analyzing the relationships between coping styles and the treatment outcome none were significant (*After Bonferroni corrections p must be ≤ .007)* – see Table 4. There was no multicollinearity ($r \leq .90$) between the different coping styles.

Table 4 – Pearson's correlation r between TOS, coping styles and inter-correlations

	TOS	**Active problem solving**	**Palliative reaction**	**Avoidance**	**Social Support**	**Passive reaction pattern**	**Expression of emotions**	**Comforting cognitions**
N = 255-263								
Active problem solving	-.031 (*p*=.621)	1.000	.237* (*p*=.000)	-.251* (*p*=.000)	.181* (*p*=.004)	.207* (*p*=.001)	.121 (*p*=.055)	.377***** (*p*=.000)
Palliative reaction	-.051 (*p*=.410)		1.000	.103 (*p*=.099)	.283***** (*p*=.000)	-.065 (*p*=.299)	.100 (*p*=.107)	.395***** (*p*=.000)
Avoidance	.002 (*p*=.969)			1.000	-.226 (*p*=.000)	.363***** (*p*=.000)	-.139* (*p*=.026)	.148* (*p*=.018)
Social Support	-.068 (*p*=.277)				1.000	-.146* (*p*=.019)	.265****** (*p*=000)	.238***** (*p*=.000)
Passive reaction pattern	.080 (*p*=.196)					1.000	.139* (*p*=.025)	-.079 (*p*=.204)
Expression of emotions	.020 (*p*=.745)						1.000	.015 (*p*=.808)
Comforting cognitions	-.147 (*p*=.018)							1.000

3.3.2 Previous number of depressive episodes

The number of previous depressive episodes within the sample was highly mixed. In this sample 87.1% of participants had experienced one or more depressive episodes – see Table 5. In order to calculate the relationship with the TOS the number of depressive episodes was recoded into an categoric variable. None previous episodes of depression were recoded into category 0. One too five or more previous depressive episodes were recoded into category 1, including unknown number of depressive episode. Chronic depression was recoded into category 2 – see Table 5. The relationship between the number of depressive episodes and TOS was very small and not significant (*rho = .040, p* = .681), according to Spearman's rank correlation coefficient.

Table 5 – Previous number of depressive episodes

	Current Sample	Ordinal Category
N	263	
Depressive episodes		
None	34 (12.9%)	0
One	57 (21.7%)	1
Two	31 (11.8%)	1
Three	21 (8.0%)	1
Four	8 (3.0%)	1
Five or more	32 (12.2%)	1
Unknown number	41 (15.6%)	1
Chronic	39 (14.8%)	2

3.3.3 Social Support

The perceived social support reported by Dutch elders was ranging from never (SSL12-I mean total score = 1) to often (SSL12-I mean total score = 3.83). The median amount of social support was 2.33 on the SSL12-I which lies between 'sometimes' and 'frequently' (*N* = 259, *M* = 2.34, *SD* = 0.51). In the sample 60.1% of elders reported that they knew someone with whom they could talk with in confidentiality. The relationship between social support and TOS is not significant (r = -.069, p = .271).

After examining social support with a T-test, there seemed to be a small significant gender difference (Cohen's *d* = -0.32,) for the level of social support. Males had a mean SSL12-I score of 2.23 (*SD* = 0.47), which is significantly lower than women's mean SSL12-I score of 2.39 (*SD* = 0.52) (*T* (217) = -2.43, *p* = .016).

Furthermore, a two-way Analysis of Variance was conducted on the influence of gender and social support on the Treatment Outcome Score (TOS). In order to do so, social

support was divided into two levels ('low' ranging from 'never' to 'sometimes', and 'high' ranging from 'frequently' to 'often') in line with the study by Sonnenberg et al. (2013). Gender included two levels (male and female). None of the effects were statistically significant. The main effect for gender yielded an F ratio of $F(1, 215) = 3.22$, $p = .074$, indicating that the effect for gender was not significant, males ($M = -0.10$, $SD = 0.83$) and females ($M = 0.06$, $SD = 1.06$). The main effect for social support yielded an F ratio of $F(1, 215) = 0.60$, $p = .438$, indicating that the effect for social support was not significant, low social support ($M = 0.171$, $SD = 0.934$) and high social support ($M = -0.044$, $SD = 1.025$). The interaction effect Gender *x* Social Support was also not significant $F(1, 215) = 3.22$, $p = .074$. In a regression analysis with the interaction variable Gender *x* Social Support the relationship with the TOS was also not significant ($R^2 = .125$, $p = .335$).

3.3.4 Gender

After examining gender and the TOS with a T-test, there seemed to be no gender difference for the treatment outcome. Males had a mean TOS of -.167 ($SD = 0.82$), which was not significantly lower than women's mean TOS of .068 ($SD = 1.06$) ($df = 261$, $T = -1.737$, $p = .055$). By executing a Pearson's Chi-Square test and Fisher's Exact Test with a dichotomous version of the TOS scores (significant decrease or increase of depression symptoms) it is confirmed that there was no relation between gender and an increase or decrease in depression symptoms ($X^2 = 0.056$, $p = 1.000$).

Furthermore, a two-way Analysis of Variance was conducted on the influence of gender and age on the Treatment Outcome Score. Gender included two levels (male and female) and age consisted of two levels ('young elders' ranging from 55 to 65 years of age, and 'old elders' ranging from 66 to 85 years of age). None of the effects of gender, age, and gender *x* age were statistically significant.

3.3.5 Age

The majority of people (75.3%) had an age between 55 and 70 years ($M_{age} = 65.36$ years, $Mode_{age} = 62$ years, $SD_{age} = 7.19$ years). The relationship between age and TOS was not significant ($r = -.031$, $\alpha = .612$). Because this sample had not such a wide age range as the study by Chui et al. (2015) had, only the cut-off at 65+ years could be reproduced. We therefore examined the difference between very young elders (≤64 years) and young elder (≥65 years) on their Treatment Outcome Score with a T-test for independent and unequal

variances and used the same test as Chui et al. (2015) did. Considering the results, there seemed to be no age difference for the treatment outcome. Elders above the age of 65 had a mean TOS of .0046 which was not significantly lower than elders younger than 66 years with a mean TOS of .0045 (df = 261, T = 0.074, p = .941). This was also confirmed by the Mann-Whitney test (U = 8496.5, z = -0.241, p = .810), meaning that the distributions of TOS scores did not differ for older (≤65 years) or younger (≥64 years) elders.

3.3.6 Educational level

After examining levels of education and TOS with One-Way ANOVA there seemed to be no difference in Treatment Outcome Scores between people with higher education and people with lower education (F(259) = 0.07, p = .794). By executing a Chi-Square test with a dichotomous version of the TOS scores (significant decrease or increase of depression symptoms) it was confirmed that there was no relation between education and an increase or decrease in depression symptoms (X^2 (1) = .230, p = .880).

3.4 Predicting the TOS

In this paragraph, all of the independent variables were analyzed as possible predictors of the Treatment Outcome Score with stepwise Multiple Regression Analysis (MRA).

3.4.1. Checking assumptions for MRA

Concerning the assumptions for regression analysis with the Treatment Outcome Score (TOS) there was no multicollinearity between predictors: there were no bivariate correlations above $r \leq .90$. The residual scores of the observed TOS and the predicted TOS were calculated and analyzed with histograms and normal probability plots. The residuals were normally distributed. The variation between the bivariate residuals of predictors and the TOS were analyzed by plotting the standardized residuals on the y-axis and the standardized predicted values on the x-axis. It seemed there was a homoscedastic variation in residual spread. Furthermore, after plotting every individual predictor against the TOS in a separate graph there were no patterns detected and therefore the regressions between each predictor and TOS appeared to be linear. Therefore, the TOS seems fit for use as an outcome measure for the Coping With Depression Course.

3.4.2. Multiple Regression Analysis on all predictors

Multiple Regression Analysis is used to examine if the TOS could be predicted by coping styles, social support, number of depressive episodes, gender, age and education. The stepwise method was used whereby combined ineffective coping styles (palliative reaction, avoidance, passive reaction pattern and expression of emotions), combined effective coping styles (active problem solving, seeking social support and comforting cognitions), social support and age were assigned to block 1. Previous depressive episodes, gender and education as dummies were assigned to block 2 and added to the regression via the enter method. For this regression analysis model 1 (block 1) (F (4,167) = 0.64; p = .637, R^2 = .015) and model 2 (block 2) (F (7,164) = 0.60; p = .752, R^2 = .025) are not fit to predict the TOS.

For the second regression analysis, all the separate coping styles were assigned to block 1. The other predictors were included the same way as in model 1 and model 2. Again, model 3 (block 1) (F (9,162) = 0.57; p = .820, R^2 = .031) and model 4 (block 2) (F (9,162) = 0.54; p = .887, R^2 = .039) are not fit to predict the TOS.

The same regression analyses were executed for males and females separately. Amongst men none of the predictors had a significant influence on the TOS; model 1 (block 1 (F (4,47) = 0.58; p = .681, R^2 = .047)), model 2 (block 2 (F (6,45) = 0.82; p = .563, R^2 = .303)), model 3 (block 1 (F (9,42) = 1.51; p = .176, R^2 = .245)), model 4 (block 2 (F (11,40) = 1.58; p = .143, R^2 = .303)).

Amongst women none of the predictors had a significant influence on the TOS; model 1 (block 1 (F (4,115) = 1.09; p = .367, R^2 = .036)), model 2 (block 2 (F (6,113) = 1.00; p = .429, R^2 = .050)), model 3 (block 1 (F (9,110) = 0.62; p = .782, R^2 = .048)), model 4 (block 2 (F (11,108) = 0.62; p = .811, R^2 = .059)).

4. Discussion

4.1 General summary

This study examined the differences between treatment outcome of the participants following the CWD course and possible predictors of that difference. Most of the elders had a decrease in symptoms after following the CWD course (74.1%), the rest of Dutch elders had an increase in symptoms. There were no elders who remained the same number of depression symptoms. Literature discussed in the introduction led to the examination of coping styles (Greenglass et al., 2006; Schreurs et al., 1993; Bjørkløf et al., 2013; Jaspers et al., 1989;

Orzechowska et al., 2013; Rohde et al., 1990; Wei et al., 2006), number of previous depressive episodes (Taylor et al., 2010; Haringsma et al., 2006; Paykel, 2008), level of social support (Sarason et al., 1990; Kessler & McLeod, 1985; Goodwin et al., 2012; Sonnenberg et al., 2013), gender (Kessler, 2006; Sonnenberg et al., 2013), age (Chui et al., 2015) and educational level (Haringsma et al., 2006) as possible predictors of treatment outcome.

In summary, hypothesis 1 is confirmed since Dutch elders with depression symptoms use different coping styles than their non-clinical norm group. However, contrary to the expectations of this study in hypothesis 8, all of the proposed prognostic variables were not significant. Hypothesis 2 was not confirmed since use of specific coping styles, ineffective or effective, did not predict treatment outcome or correlated with the treatment outcome. Hypothesis 3 was also not confirmed since number of previous depressive episodes showed to be no significant predictor of treatment outcome. Hypothesis 4 was neither confirmed since the level of social support did not predict treatment outcome, neither did age (hypothesis 6) and educational level (hypothesis 7). Men and women did not differ on treatment outcome and gender did not predict treatment outcome. There was no Gender *x* Social Support interaction or Gender *x* Age interaction on the treatment outcome (hypothesis 5.1 and 5.2).

4.2 Findings

Elaborating further on the findings for hypothesis 1 concerning coping, Dutch older men with depression symptoms used less active problem solving, more palliative reaction, more avoidance and more passive reaction pattern than the younger men in the non-clinical norm group. This pattern of use of coping styles does not seem strange for men with depression as well as being older because it is normal for older men to use less active problem solving than younger men (Scheurs et al., 1993). Furthermore, people with depression symptoms are more likely to use more ineffective coping styles than healthy people (Schreurs et al., 1993). Dutch older women with depression symptoms used less active problem solving, less expression of emotions, less comforting cognitions and more passive reaction pattern in comparison of the younger women in the non-clinical norm group. Use of less effective coping styles in combination with internalization of problems (less expression of emotions and more passive reaction pattern) is normal for women at higher age with depression symptoms in comparison with younger and healthy women (Schreurs et al., 1993). This information could explain the differences in coping scores between the study sample and the non-clinical norm groups.

The relation between number of previous depressive episodes and treatment outcome was very small and not significant. In the study by Haringsma et al. (2006) the relationship was also very small, but number of previous depressive episodes was a significant predictor for treatment outcome in follow-up measurements. The different moments of measuring the treatment outcome could have influenced the absence of a predicting effect of number of previous depressive episodes on the treatment outcome.

The relation between social support and treatment outcome was examined in line with the research by Sonnenberg et al. (2013). Different to the study by Sonnenberg et al. (2014), men and women did not differ much on their levels of social support. A Gender *x* Social Support interaction in relation to the TOS was not found. This could be due to the fact that in the study by Sonnenberg et al. (2013) this vulnerability in men was also based on need for affiliation together with the level of social support. Need for affiliation was not measured in this study, and possibly influenced the absence of an interaction effect between gender and social support.

Dissimilar to the study by Sonnenberg et al. (2013), there was no relation between gender and treatment outcome and gender did not predict the treatment outcome.

Another dissimilarity to the study by Sonnenberg et al. (2013) is that there was no Gender *x* Age interaction in the relation with the treatment outcome. Age was not related to the treatment outcome and depression symptoms at pre-treatment did not increase with age. An explanation for this could be the fact that the study by Sonnenberg et al. (2013) found this interaction of Gender *x* Age in the relation with number of depression symptoms for people over 85 years of age where depression symptoms were more prevalent in men than in women. The sample of the current study did not exceed the age of 70 years and had a mode age of 62 years, so maybe this study sample was too young to find such an interaction.

Dissimilar to the study by Haringsma et al. (2006) there was no relation between educational level and treatment outcome and treatment outcome did not differ amongst people with higher or lower education. This could be due to the fact that Haringsma et al. (2006) used different techniques and co-variables for analyzing the prognostic influence of education on the treatment outcome in regression analysis, which could partly explain the different outcome in regression analysis in this study.

4.3 Limitations

This study tried to make secondary analyses of significant value, but it encountered many limitations in its ability to generalize findings. The current findings are only generalizable to this study sample because it is not a controlled treatment outcome study and therefore it is not certain if the findings are due to spontaneous remission or improvement. Also, all participants did not receive the CWD course at the same time whereby controlling for influences of time and experiences was not possible. Another limitation of this study is the lack of matching ages in the norm groups for interpreting the scores on the coping questionnaire. Therefore, the conclusion that this sample showed more ineffective coping styles than the norm group is not justified.

A possible interfering factor to the treatment outcome could be the presence of comorbidity of mental illnesses in the study sample. Comorbidity could bias some of the relations between predictors and the treatment outcome. It was also limiting that this study had a relatively small sample size considering the comprehensive analyses it made, whereby significant results are hard to find. The sample size in this study was smaller than in the study by Haringsma et al. (2006) because there were limited UCL-scores registered at pre-treatment due to the different timeframes of intervention groups and waiting-list-control groups.

To end with a positive note, a strong part of this study is the monitoring of coping patterns of Dutch elders with depression symptoms. This offers a possibility for better triage of depressed elders into the most suitable depression intervention. Although this study lacked validity, it hopefully brings motivation for further research with more valid designs to examine the influence of coping on the treatment benefit of elders. In the next paragraph a modest proposal for further research is given.

4.4 Practical implications

The current focus in treatment research is relapse prevention for depression. Because the findings showed that depressive elders use different ways of coping than healthy and younger people, it could be beneficial for their treatment benefit and important in preventing relapse if treatment would address ineffective coping styles and enhances effective coping styles. The current objectives of the Coping With Depression course do not include improving coping skills. The course addresses constructive thinking, but does not further teach adaptive ways of coping or tackle ineffective ways of coping. Generally, healthy people frequently use active problem solving, but with increasing age, declining mobility and presence of depression

symptoms the use of active problem solving declines. When a possibility to cope is lost a different effective way of coping has to be established or enhanced in order to deal with stress. Therefore, a practical implication for future implementation of the CWD course would be to enhance effective ways of coping and taking into account that elderly people with depression symptoms have less ability to actively cope with problems. Successively this adjustment could result in a higher level of treatment outcome for the CWD course. Future research could examine the effectiveness of extra training in effective ways of coping. This research could include a randomized controlled treatment outcome study with three conditions; in the first condition elders first get training in effective coping and afterwards receive the CWD course. In the second condition elders only get the CWD course. In the third condition elders only get training in effective coping. Before and after completing the course and/or training participants will be measured on number of depression symptoms and use of coping styles to see if any of the variables have changed. Because literature (Sarason et al., 1990; Kessler & McLeod, 1985; Goodwin et al., 2012; Sonnenberg et al., 2013) is clear about possible influences of social support on the treatment outcome, social support should also be measured pre-treatment and post-treatment to see if the CWD course (in conditions 1 and 2 of the RCT) also enhances perceived social support as it intends by enhancing people's social skills.

4.5 Conclusions

The results indicated that contrary to the expectations of this study none of the proposed prognostic variables were significant. Since it is important to provide treatments that are effective for many different kinds of people, it could be helpful to do more research about the effectiveness of treatments which focusses on different types of client characteristics. To do so, based on this study and others (Taylor et al., 2010; Haringsma et al., 2006; Paykel, 2008; Sarason et al., 1990; Kessler & McLeod, 1985; Goodwin et al., 2012; Sonnenberg et al., 2013), it is important to identify the persons with ineffective coping and low social support, and to help them to increase their effective coping behaviours and to enhance their social support. Especially for the treatment of depressive elders it could be good to consider enhancing their perceived social support and to widen their ways of effective coping since they generally use less active problem solving.

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