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Garnefski, N.; Baan, N.; Kraaij, V.

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## Psychological distress and cognitive emotion regulation strategies among farmers who fell victim to the foot-and-mouth crisis

Nadia Garnefski \*, Netty Baan, Vivian Kraaij

*Division of Clinical and Health Psychology, University of Leiden, P.O. Box 9555, 2300 RB Leiden, The Netherlands*

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### Abstract

This study focused on the relationship between the use of specific cognitive emotion regulation strategies and psychological distress among 288 farmers who had fallen victim to the foot-and-mouth crisis in The Netherlands. The specific cognitive strategies they used to handle the crisis were measured by the Cognitive Emotion Regulation Questionnaire (CERQ). Relationships were studied by means of Pearson correlations, multiple regression analyses and structural equation modelling. Positive relationships were found between psychological distress and self-blame, other-blame, rumination and planning. Negative relationships were found between psychological distress and positive refocusing and positive reappraisal. The results suggest that cognitive emotion regulation strategies may be a useful target for intervention.

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**Keywords:** Cognitive-coping; Depression; Anxiety; Intrusion; Avoidance; Foot-and-mouth crisis

*“Everything I worked for has gone. My life has been destroyed. I really don’t know what to do”*

*“All my animals were killed. It was awful. But I will survive. We have to go on and we will”*

Two farmers who fell victim to the foot-and-mouth crisis.

\* Corresponding author. Tel.: +31 71 5273774/54; fax: +31 71 5273619.  
E-mail address: [garnefski@fsw.leidenuniv.nl](mailto:garnefski@fsw.leidenuniv.nl) (N. Garnefski).

## 1. Introduction

March 21, 2001, The Netherlands became the third country in Europe to fall victim to the foot-and-mouth disease. Following European rules, all cattle on affected farms and all cattle on farms within a 2-km radius around affected sites were killed and destroyed in an effort to stop the disease from spreading further. In addition, restrictive measures were taken for farms within a radius of 10 km regarding the transport of their animals. Between March 21 and April 22 more than 270,000 animals were killed, turning the foot-and-mouth crisis into a major traumatic event for a large number of dairy farmers.

Studies in a wide range of populations have demonstrated that exposure to traumatic events may result in long-term psychological adjustment problems, such as posttraumatic stress disorder, high levels of intrusion and avoidance, and symptoms of depression or anxiety (e.g. Brewin, Andrews, & Valentine, 2000; Shalev, 1996). It is also known that a strong relationship exists between intensity of the trauma and subsequent psychological distress (Shalev, 1996). However, it has also been shown that not everyone who experiences a traumatic event goes on to develop psychological distress (Brewin et al., 2000). There is increasing evidence that (ongoing) psychological distress in response to the experience of negative life events or traumata may be associated with the use of maladaptive cognitive styles (Bryant, Moulds, & Guthrie, 2001).

One factor that has been hypothesised to be important in determining whether psychological problems will go on to develop, or not, is the cognitive emotion regulation strategies someone uses to deal with the traumatic event (Garnefski, Kraaij, & Spinhoven, 2001; Garnefski, Kraaij, & Spinhoven, 2002). Recent studies have shown that the cognitive emotion regulation strategies of self-blame, rumination and catastrophising are related to the reporting of more symptomatology, while other strategies such as positive reappraisal are related to the reporting of less symptoms of psychopathology (Garnefski et al., 2001; Garnefski, Legerstee, Kraaij, van den Kommer, & Teerds, 2002; Garnefski, van den Kommer, et al., 2002; Kraaij et al., 2003; Kraaij, Pruymboom, & Garnefski, 2002). These findings suggest that by using certain cognitive strategies, people may be more vulnerable to developing psychopathology in response to negative life events or, the other way around, that by using other cognitive strategies, people may more easily tolerate or master negative life experiences. As these conclusions are based on the use of cognitive strategies considered from a *style* perspective, however, it is not possible to draw conclusions about the functionality of specific cognitive emotion regulation strategies in specific stress situations (e.g. Garnefski et al., 2001; Garnefski, van den Kommer, et al., 2002).

Although empirical studies on the functionality of specific cognitive strategies in specific stress situations are scarce, some data are available which suggest that coping effectiveness depends importantly on the type of stressful situation that the individual confronts (Thoits, 1995) and that some cognitive strategies may in certain circumstances even be associated with opposite outcomes. For example, certain forms of ruminative thinking or self-blame have been found to be helpful in coping with certain stressful life events (Janoff-Bulman, 1992; Tedeschi, 1999). It has therefore been suggested that new studies should focus on questions such as whether strategies that are considered (in)adaptive in earlier studies are indeed (in)adaptive in all specific circumstances (Gross, 1999) and to identify the types of strategies which reduce distress or ill health in response to particular types of situations (Thoits, 1995). It may very well be true that a certain cognitive strategy

that is highly inadaptive in one situation is not in a specific situation like falling victim to the foot-and-mouth crisis.

Against this background, there is a need for studies focusing on the question of what the relationship is between the use of specific cognitive strategies in response to specific life events and psychopathology. On the basis of such studies, important clues may be found with regard to the identification of subgroups of people at risk for the development of psychopathology. If it turns out to be true, that some people—by using certain cognitive strategies—are more vulnerable, while others—by using other strategies *in response to the same type of life event*—are more resilient to the development of disturbances, this would carry important opportunities for a more targeted tailoring of treatment.

The purpose of the present study was to investigate the influence of specific cognitive emotion regulation strategies on psychological distress among farmers six months after falling victim to the foot-and-mouth crisis in The Netherlands. In this study, we hypothesised that on top of both background variables and trauma intensity, a significant amount of variance in psychological distress scores would be explained by the cognitive emotion regulation strategies that farmers used to handle the traumatic event. On the basis of previous research on cognitive emotion regulation styles, it was expected that especially self-blame, rumination, and catastrophising would be significantly related to more psychological distress, while positive reappraisal would be significantly related to less psychological distress (e.g. Garnefski et al., 2001).

## 2. Method

### 2.1. Sample

The sample consisted of 288 farmers who had fallen victim to the foot-and-mouth crisis in The Netherlands. All participants were farmers of premises in the area where the foot-and-mouth epidemic had broken out and all participants had experienced a serious threat of the slaughtering and disposal of their animals as well as transport restrictions (while 58.4% had actually experienced the slaughtering and disposal of their animals).

The farmers ranged in age from 18 to 65 years (mean age 45). There were 194 males (67.3%). Eighty-nine percent of the farmers were married or lived together with a partner, while 8.8% were unmarried, 0.4% divorced and 1.8% widowed. Of all farmers, 1.8% had no secondary education at all, 36% had completed three or four years of secondary education, 5.6% had five or six years of secondary education, 45.8% had lower or intermediate vocational education, 9.2% had higher vocational education or university, while 1.8% indicated to have followed another, non-specified form of education.

### 2.2. Procedure

The sample was obtained by approaching farmers who lived in the part of the Netherlands that was most seriously affected by the foot-and-mouth crisis (Kootwijkerbroek). Addresses were obtained via farming federations. In September 2001, 1176 questionnaires (one per household) were sent to the home addresses, of which 319 were returned. Because of ethical issues, it was not

possible to obtain information on possible differences between those who filled out the questionnaire and those who did not. People who filled in the questionnaire were guaranteed anonymity. For the purpose of the present study, it was decided only to select the 18–65-year old farmers ( $N = 288$ ).

### 2.3. Instruments

Information was obtained on perceived intensity of the trauma, on the experience of other negative life events before as well as after the foot-and-mouth outbreak, and on the cognitive emotion regulation strategies farmers used to handle the foot-and-mouth experiences. Also, symptoms of depression, anxiety, and trauma-related distress were assessed. Below, a detailed description of the included measures is given.

#### 2.3.1. Intensity of the trauma

In general, three important event-related factors are assumed to be associated with the intensity of the trauma or the development of post-traumatic stress, i.e. level of helplessness, level of uncontrollability and level of unpredictability (APA, 1995). Therefore, the following three items were included. The first item assessed the extent to which participants had experienced feelings of *helplessness* ('I had the feeling that everything I tried resulted in a failure'). The second item referred to feelings of *uncontrollability* ('I had the feeling that it was hardly possible for me to exercise influence on the events'). The third item assessed feelings of *unpredictability* ('I had the feeling that I was not informed on time on matters that were important to me'). The three items all had answer categories ranging from 1 (strongly disagree) to 5 (strongly agree).

A score assessing total *trauma intensity* was obtained by summing the three items. Lowest score is 3 and highest score is 15 (mean score of the present sample is 11.26 with a standard deviation of 2.81). The higher the score, the higher the intensity of the trauma. Correlations between the three items range from .45 to .50, while the alpha reliability of the total trauma-intensity scale in the present sample is .72. Correlations of the items with the total scale score are between .76 and .83. Only the total scale score was included as a measure in the present paper.

#### 2.3.2. Life events

A self-constructed checklist was used to collect data on the experience of negative life events, before as well as since the outbreak of the foot-and-mouth epidemic. Life events that were measured were: divorce, long-lasting and/or severe physical illness of self or significant others, severe mental illness of significant others, death of a spouse and/or significant others, attempted suicide of significant others, unwanted pregnancy, having been victim of crime, accident, sexual abuse and/or physical abuse (self). These events were assessed for two periods: before the foot-and-mouth outbreak and after the foot-and-mouth outbreak. For the purpose of the present study, only the total number of life events experienced before and after the outbreak was included as a variable. Also a total number of negative events score (before and after) was obtained.

#### 2.3.3. Cognitive emotion regulation strategies

To measure the specific cognitive strategies farmers used in response to the experiences around the foot-and-mouth crisis, the Cognitive Emotion Regulation Questionnaire (CERQ) was used (Garnefski, Kraaij, et al., 2002). The CERQ is a 36-item questionnaire, consisting of the following

nine conceptually distinct subscales, each consisting of four items and each referring to what someone thinks after the experience of a threatening or stressful life event:

1. *Self-blame*, referring to thoughts of blaming yourself for what you have experienced.
2. *Acceptance*, referring to thoughts of accepting what you have experienced and resigning yourself to what has happened.
3. *Rumination or focus on thought*, referring to thinking about the feelings and thoughts associated with the negative event.
4. *Positive refocusing*, referring to thinking about joyful and pleasant issues instead of thinking about the actual event.
5. *Planning*, referring to thinking about what steps to take and how to handle the negative event. It is the cognitive part of action-focused coping, which does not automatically imply that actual behaviour will follow.
6. *Positive reappraisal*, referring to thoughts of attaching a positive meaning to the event in terms of personal growth.
7. *Putting into perspective*, referring to thoughts of playing down the seriousness of the event or emphasising its relativity when compared to other events.
8. *Catastrophising*, referring to thoughts of explicitly emphasising the terror of an experience.
9. *Blaming others*, referring to thoughts of putting the blame of what you have experienced on others.

Cognitive emotion regulation strategies are measured on a 5-point Likert scale ranging from 1 ((almost) never) to 5 ((almost) always). Individual subscale scores are obtained by summing up the scores belonging to the particular subscale or cognitive emotion regulation strategy (ranging from 4 to 20).

To assess the cognitive strategies farmers reported in response to the foot-and-mouth outbreak, the following instruction was written down ‘*Many people in your surroundings have experienced the negative events around the foot-and-mouth outbreak. Everyone responds to these experiences in his or her own way. Below a number of thoughts are written down people might have about the negative foot-and-mouth experiences. Read the sentences below and indicate how often you have the following thoughts*’.

Earlier studies on the CERQ have provided empirical support to the allocation of items to nine subscales by means of principal component analyses and have shown that the subscales have good internal consistencies, with alphas ranging from .67 to .81 (Garnefski et al., 2001; Garnefski, Kraaij, et al., 2002). In the present study, the subscales also appear to have good internal consistencies, with alphas ranging from .70 to .90.

#### 2.3.4. *Depression and anxiety*

Depression and anxiety were measured by two subscales of the SCL-90 (Symptom Check List: Derogatis, 1977; Dutch translation and adaptation by Arrindell & Ettema, 1986). The depression subscale consists of 16 items, while the anxiety subscale consists of 10 items. Answer categories of the items range from 1 (not at all) to 5 (very much). Scale scores are obtained by summing the items belonging to the scale. Previous studies have reported alpha-coefficients ranging from .82 to .93 for depression, and from .71 to .91 for anxiety. In addition, test–retest reliabilities are found

to be good and both subscales have been found to show strong convergent validity with other conceptually related scales (Arrindell & Ettema, 1986). In the present sample alpha coefficients were found of .92 and .91 for depression and anxiety. Mean scores were 25.35 (sd = 9.69) and 14.70 (sd = 5.84), respectively.

#### 2.3.5. *Trauma-related distress: intrusion and avoidance*

Trauma-related distress was measured by the IES (Impact of Event Scale: Horowitz, Wilner, & Alvarez, 1979; Dutch translation and adaptation by Brom & Kleber, 1985). The IES is a self-report scale that can be used to assess the frequency of intrusive and avoidant phenomena associated with the experience of a particular event (Joseph, 2000). The IES consists of two subscales: intrusion and avoidance. The intrusion subscale consists of 7 items; the avoidance subscale consists of 8 items. Possible answer categories are: 0 (not at all), 1 (rarely), 3 (sometimes) and 5 (often). Scale scores are obtained by summing the items belonging to the scale. Intrusion has a possible range of 0–35; avoidance may range from 0 to 40, with higher scores indicating a greater frequency of intrusive thoughts and attempts of avoidance. Alpha reliabilities for the intrusion scale have been found to range between .72 and .92, and for the avoidance scale between .65 and .90. Research supports the validity of the IES as a measure of trauma-related distress (Joseph, 2000; Sundin & Horowitz, 2002). In the present sample alpha coefficients were found of .91 and .88 for intrusion and avoidance, respectively. Mean scores were 12.73 (sd = 10.12) and 8.66 (sd = 9.26), respectively.

### 3. Results

First, Pearson correlations were calculated between background characteristics, trauma intensity and cognitive strategies at the one side and measures of psychological distress at the other (Table 1). For gender only a significant, but small relationship with avoidance was found (women more avoidant). Age showed small, significant relationships with both intrusion and avoidance. The experience of negative life events before the foot-and-mouth crisis was significantly related to all four measures of psychological distress. Much stronger relationships with distress, however, were found for the experience of negative life events after the crisis and for the total number of life events experienced. Strong, significant correlations were found between trauma intensity and all four measures of distress. With regard to the nine cognitive strategies, the strongest (positive) relationships were found for self-blame, acceptance, rumination, planning, catastrophising and other-blame. Moderate negative relationships were found for positive refocusing.

Four multiple regression analyses were performed. Dependent variables were depression, anxiety, intrusion and avoidance. As independent variables three sets of variables were included: background characteristics (gender, age, number of life events), trauma intensity and cognitive emotion regulation strategies (Table 2).<sup>1</sup> Both MRA with depression as dependent variable and MRA with anxiety as dependent variable show that, after controlling for all other variables, gen-

<sup>1</sup> Including all three negative life event variables together in one MRA was not possible, because of their strong correlations and associated risk on multicollinearity. Therefore, it was decided to only include total number of negative life events.



Table 1

Pearson correlations of background characteristics, trauma intensity and cognitive strategies with measures of psychological distress

	Correlations with measures of psychological distress, <i>r</i>			
	Depression	Anxiety	Intrusion	Avoidance
<i>Background characteristics</i>				
Gender	-.04	.06	.10	.13*
Age	.08	.05	.14*	.18**
Negative life events before	.13*	.13*	.17**	.12*
Negative life events after	.32***	.30***	.22***	.16**
Total negative life events	.27***	.27***	.26***	.19**
Trauma intensity	.39***	.35***	.47***	.34***
<i>Cognitive strategies</i>				
Self-blame	.40***	.38***	.39***	.39***
Acceptance	.36***	.33***	.41***	.33***
Rumination	.63***	.59***	.74***	.65***
Positive refocusing	-.15*	-.05	-.17**	-.12*
Planning	.54***	.53***	.54***	.52***
Positive reappraisal	.08	.08	.12	.03
Putting into perspective	-.04	-.03	-.07	-.08
Catastrophising	.58***	.52***	.66***	.60***
Other-blame	.44***	.36***	.53***	.43***

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

der, age and trauma intensity do not contribute independently to the ‘prediction’ of scores. Of the background characteristics only total number of negative life events has significant, positive relationships with depressive and anxiety symptoms. In addition, the cognitive strategies of self-blame, rumination and planning show significant, positive relationships with both depressive and anxiety scores, while positive reappraisal shows significant, negative relationships with both measures.

The results of MRA with intrusion as dependent variable show a significant effect for gender, negative life events and trauma intensity. A strong, unique relationship is found for rumination. In addition, smaller, but also significant relationships are found for other-blame and positive refocusing (the latter a negative relationship). The MRA with avoidance as dependent variable shows independent effects for gender, self-blame, rumination, planning and positive reappraisal (the latter a negative relationship).

Next aim was to arrive at a parsimonious model on the relationship between cognitive strategies and psychological distress. This was done by combining the results of the four separate MRA’s into one model. In this model depression, anxiety, intrusion and avoidance were considered as the *manifest* indicators of one *latent* construct referring to psychological distress.<sup>2</sup> Other variables of this study were considered as possible ‘predictors’ of this latent variable. As background

<sup>2</sup> PCA confirmed the existence of one underlying factor with loadings of .80, .79, .77, .76 for depression, anxiety, intrusion and avoidance, respectively.



Table 2

Regression analyses with background characteristics, trauma intensity and cognitive strategies as independent variables and measures of psychological distress as dependent variables (method = enter)

	Regression analyses with measures of psychological distress as dependent variables, $\beta$			
	Depression	Anxiety	Intrusion	Avoidance
<i>Background characteristics</i>				
Gender	ns	ns	.11*	.17**
Age	ns	ns	ns	ns
Other negative life events	.12***	.11*	.09*	ns
Trauma intensity	ns	ns	.12*	ns
<i>Cognitive strategies</i>				
Self-blame	.12*	.13*	ns	.16**
Acceptance	ns	ns	ns	ns
Rumination	.25**	.27**	.38***	.29***
Positive refocusing	ns	ns	-.10*	ns
Planning	.23**	.28***	ns	.20**
Positive reappraisal	-.15*	-.19**	ns	-.16**
Putting into perspective	ns	ns	ns	ns
Catastrophising	ns	ns	ns	ns
Other-blame	ns	ns	.11*	ns
Total variance explained ( $R^{2adj}$ )	.47***	.41***	.60***	.49***

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

‘predictor’ the variables gender and total number of negative life events were included. Age was omitted from the model, as none of the separate MRA’s appeared to have significant age effects. Trauma intensity was included as well as the cognitive strategies for which at least one of the MRA’s had yielded significant results. This implied that the cognitive strategies acceptance, putting into perspective and catastrophising were not included in the final model. The obtained model was tested by structural equation modelling (EQS). On theoretical grounds correlations between the error terms of the cognitive strategies and correlations between the four dependent variables were allowed. The structural model appeared to have a good fit (average absolute standardised residuals = 0.016;  $\chi^2(57) = 67.54$ ;  $p = 0.16$ ; comparative fit index [CFI] = 0.99). The results are shown in Fig. 1.

Inspection of Fig. 1 from the right to the left firstly shows that the *latent variable* called psychological distress is indeed a strong reflection of all four distress indicators, i.e. depression, anxiety, intrusion and avoidance. Most important ‘predictors’ of overall psychological distress are—after controlling for gender, negative life events, intensity of the trauma and the other cognitive strategies—the cognitive strategies of rumination ( $r = .48$ ), planning ( $r = .20$ ), self-blame ( $r = .16$ ), other-blame (.14) and positive refocusing (–.13). A small, negative coefficient (–.08) is found for positive reappraisal. A Wald test (for dropping parameters) showed that this parameter might be omitted from the model without seriously damaging the fit of the model. However, to be able to determine the relative influence of all cognitive emotion regulation variables (selected on the basis of the MRA results), it was chosen to include this variable in the final results.

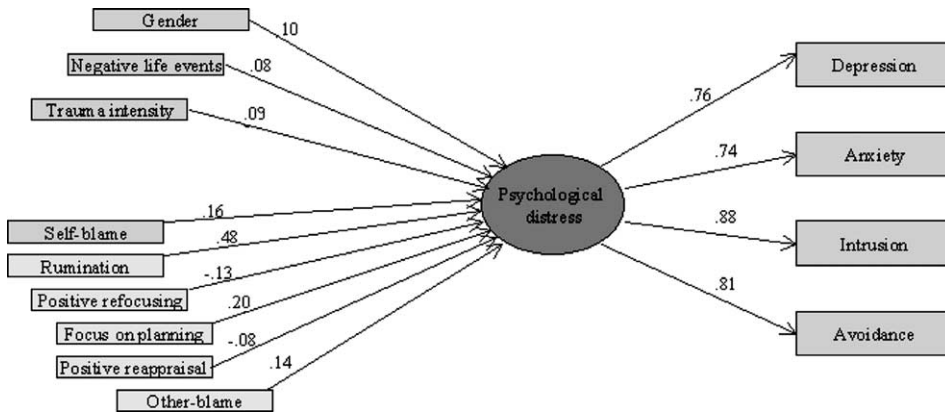


Fig. 1. Empirically derived path model. Tested by structural equation modelling with standardized path coefficients.

#### 4. Discussion

The present study focused on the relationship between psychological distress among farmers six months after they had fallen victim to the foot-and-mouth crisis in The Netherlands and the specific cognitive strategies they used to handle this crisis. Significant effects were found for the cognitive strategies of rumination, planning, self-blame, other-blame, positive refocusing and positive reappraisal. Rumination appeared to have the strongest relationship with self-reported psychological distress, both in the structural equation modelling as in the separate regression analyses. This result clearly confirmed the findings of previous studies showing that rumination as a cognitive emotion regulation style is related to psychopathology (e.g., Garnefski et al., 2001; Nolen-Hoeksema, 2000). On the basis of the present study, the conclusion can be added that also in the specific situation of the cattle slaughtering in the foot-and-mouth crisis, rumination can be considered as a maladaptive cognitive strategy. An important effect is also found for planning. Normally, a cognitive style of planning has been shown to have positive relationships with measures of well-being and negative relationships with measures of distress (e.g. Carver, Scheier, & Weintraub, 1989). The present study, however, clearly found that in case of the specific foot-and-mouth events higher scores on planning were related to higher scores on psychological symptomatology.

It has been argued that certain cognitive strategies normally considered to be harmful and inadapative, could be beneficial under certain circumstances, for example certain forms of rumination and self-blame (Janoff-Bulman, 1992; Tedeschi, 1999). The present study adds the conclusion that planning as a cognitive strategy, normally considered to be 'healthy' and adaptive, may be counterproductive in certain stress situations. The more the cognitive strategy of 'planning' was used by the farmers of this study, the more psychopathology was also found. The assumption that differences may exist between predominating coping strategies in stress situations that are controllable by action and in stress situations that are not is not a new one (Lazarus, 1993). One of the key principles of Lazarus (1999) is that the choice of a coping strategy will usually vary with the adaptational significance and requirements of a certain threat. Although this assumption in general is shared by many researchers in the field of coping, the validity of it had not been

demonstrated yet. What is new is that the present study does affirm this assumption, suggesting that when a stress situation is not controllable, when nothing can be done to alter the situation or prevent further harm, cognitive strategies focused on planning and action may not be beneficial or even counterproductive.

With regard to the other cognitive strategies, the present study confirms earlier studies that found cognitive strategies of self- and other-blame to be related to poorer levels and strategies of positive refocusing and positive reappraisal to higher levels of well-being (e.g. Garnefski et al., 2001). Also catastrophising was found to have high correlations with the outcome measures. In contrast to what was expected, however, catastrophising did not contribute significantly to the 'prediction' of distress scores in the MRA's, probably because a rather large amount of the (shared) variance was already explained by correlated variables such as rumination.

The strong relationship between the use of specific cognitive strategies and symptoms of psychological distress suggests that the latter may form an indication for the existence of 'inadaptive' strategies of cognitive emotion regulation in farmers who had fallen victim to the foot-and-mouth crisis. This suggests that cognitive strategies may play an important role in intervention strategies developed for traumatised persons. In an uncontrollable event such as falling victim to the foot-and-mouth crisis it may be of importance to challenge 'inadaptive' strategies such as rumination, planning, blaming of self and/or others and to supply more 'adaptive' strategies such as positive refocusing and positive reappraisal, at the same time.

However, as the results of the present study are based on cross-sectional data, it is important to acknowledge that no conclusions can be drawn about causality or directions of influence. Another limitation of the design was that the detection of psychological distress as well as the assessment of cognitive strategies was made on the basis of self-reported evaluations, which may have caused some bias. In addition, our sample comprised a specific sample of farmers who had experienced the foot-and-mouth crisis. The question is to what extent these findings are generalisable to other samples and other specific life events. Although we expect that about the same results would be found as far as victims of other, *uncontrollable*, traumatic events are concerned, this hypothesis should be tested. The specific characteristics of the sample makes replication with other samples and traumas, thorough testing and further studies necessary, while prospective elements should be included. However, if our results can be confirmed, they carry important implications for the focus and content of intervention and prevention of mental health problems after the experience of traumatic events.

## References

- APA (1995). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington: American Psychological Association.
- Arrindell, W. A., & Ettema, J. H. M. (1986). *SCL-90. Handleiding bij een multidimensionele psychopathologie-indicator* (Manual for a multidimensional psychopathology-indicator/Dutch translation and adaptation). Lisse, The Netherlands: Swets & Zeitlinger BV.
- Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology*, 68, 748–766.
- Brom, D., & Kleber, R. J. (1985). De Schok Verwerkingslijst (Impact of Event Scale/Dutch translation and adaptation). *Nederlands Tijdschrift voor Psychologie*, 40, 164–168.

- Bryant, R. A., Moulds, M., & Guthrie, R. M. (2001). Cognitive strategies and the resolution of acute stress disorder. *Journal of Traumatic Stress, 14*, 213–219.
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology, 56*, 267–283.
- Derogatis, L. R. (1977). *SCL-90: Administration, scoring and procedures manual-I for the r(evised) version*. Baltimore: John Hopkins University School of Medicine, Clinical Psychometrics Research Unit.
- Garnefski, N., Kraaij, V., & Spinhoven, Ph. (2001). Negative life events, cognitive emotion regulation and emotional problems. *Personality and Individual Differences, 30*, 1311–1327.
- Garnefski, N., Kraaij, V., & Spinhoven, P. (2002). *CERQ: Manual for the use of the Cognitive Emotion Regulation Questionnaire*. Leiderdorp, The Netherlands: DATEC.
- Garnefski, N., Legerstee, J., Kraaij, V., van den Kommer, T., & Teerds, J. (2002). Cognitive coping strategies and symptoms of depression and anxiety: A comparison between adolescents and adults. *Journal of Adolescence, 25*, 603–611.
- Garnefski, N., van den Kommer, T., Kraaij, V., Teerds, J., Legerstee, J., & Onstein, E. (2002). The relationship between cognitive emotion regulation strategies and emotional problems: Comparison between a clinical and a non-clinical sample. *European Journal of Personality, 16*, 403–420.
- Gross, J. J. (1999). Emotion regulation: Past, present, future. *Cognition and Emotion, 13*, 551–573.
- Horowitz, M., Wilner, N., & Alvarez, W. (1979). Impact of event scale: A measure of subjective stress. *Psychosomatic Medicine, 41*, 209–218.
- Janoff-Bulman, R. (1992). *Shattered assumptions: Towards a new psychology of trauma*. New York: The Free Press.
- Joseph, S. (2000). Psychometric evaluation of Horowitz's impact of event scale: A review. *Journal of Traumatic Stress, 13*, 101–113.
- Kraaij, V., Garnefski, N., de Wilde, E. J., Dijkstra, A., Gebhardt, W., Maes, S., & ter Doest, L. (2003). Negative life events and depressive symptoms in late adolescence: Bonding and cognitive coping as vulnerability factors?. *Journal of Youth and Adolescence, 32*, 185–193.
- Kraaij, V., Pruymboom, E., & Garnefski, N. (2002). Cognitive coping and depressive symptoms in the elderly: A longitudinal study. *Aging & Mental Health, 6*, 275–281.
- Lazarus, R. S. (1993). Coping theory and research: Past, present, and future. *Psychosomatic Medicine, 55*, 234–247.
- Lazarus, R. S. (1999). *Stress and emotion: A new synthesis*. New York: Springer Publishing Company.
- Nolen-Hoeksema, S. (2000). The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. *Journal of Abnormal Psychology, 109*, 504–511.
- Shalev, A. Y. (1996). Stress versus traumatic stress: From acute homeostatic reactions to chronic psychopathology. In B. A. van der Kolk, A. C. McFarlane, & L. Weisaeth (Eds.), *Traumatic stress* (pp. 77–101). New York: Guilford Press.
- Sundin, E. C., & Horowitz, M. J. (2002). Impact of event scale: Psychometric properties. *British Journal of Psychiatry, 180*, 205–209.
- Tedeschi, R. G. (1999). Violence transformed: Posttraumatic growth in survivors and their societies. *Aggression and Violent Behavior, 4*, 319–341.
- Thoits, P. A. (1995). Stress, coping, and social support processes: Where are we? What next? [Extra issue]. *Journal of Health and Social Behavior, 35*, 53–79.