



Postponing worrisome thoughts in children: The effects of a postponement intervention on perseverative thoughts, emotions and somatic complaints

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ABSTRACT

In this study we examined the prospective relationships between perseverative thoughts, internalizing negative emotions, and somatic complaints in children aged 9–13, and evaluated whether a perseverative thoughts intervention had a beneficial effect on these experiences. Children ($N = 227$) from 7 primary schools in Leiden, the Netherlands, recorded their perseverative thoughts during one week, 138 of whom were instructed to postpone these thoughts to a special 30 min period in the early evening. Children who had received the postponement instructions showed a reduction in the frequency of perseverative thoughts, and girls also in the duration of them. Girl's perseverative thoughts were positively associated with the number of somatic complaints and with negative emotions. The postponement intervention also seemed to reduce somatic complaints in the seventh grade children. These findings confirm the previously found prospective relationship between perseverative thoughts and children's well-being and provide initial validation for the use of the postponement intervention to reduce perseverative thoughts in this age group, particularly for girls.

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The ability to recall stressful life events and to anticipate stressful events has several adaptive functions. It enables us to learn from previous mistakes, to avoid negative events, and to prepare for the worst (Borkovec, Ray, & Stöber, 1998; Watkins, 2008; Watkins & Baracaia, 2001). There is, however, also a downside to these abilities: thinking about past and future negative events also enables perseverative thoughts (or perseverative cognition): repetitive, negative thoughts that do not solve or improve a situation (Brosschot, Gerin, & Thayer, 2006). Examples of perseverative thoughts are: recurrent self-denigrating thoughts about a past failure on an exam or anxious thoughts about an upcoming contest. Two concepts that fall under the category of perseverative thoughts are worry ('a chain of thoughts and images, negatively affect-laden and relatively uncontrollable'; Borkovec et al., 1998) and rumination ('a class of conscious thoughts concerning one's goals and that recur in the absence of immediate environmental demands requiring the thoughts'; Martin & Tesser, 1996).

Already in childhood, these perseverative thoughts are quite common (Muris, Meesters, Merckelbach, Sermon, & Zwakhalen,

1998). Perseverative thoughts arise in middle childhood when children's cognitive development allows them to reason about future possibilities, to consider multiple outcomes, and to elaborate potential negative consequences (Muris, Merckelbach, Meesters, & Van den Brand, 2002). In line with findings confirming the downside effects of perseverative thoughts on adults' emotional functioning (Borkovec et al., 1998; Fresco, Frankel, Mennin, Turk, & Heimberg, 2002), perseverative thoughts in childhood are associated with further problems of negative affect, such as anxiety and depression (Rietveld, Prins, & Van Beest, 2002; Sandstrom, 2004; Weems, Silverman, & La Greca, 2000).

The literature on adults also has consistently shown that perseverative thoughts are positively associated with adverse physiological activation (e.g., Brosschot, Pieper, & Thayer, 2005; Pieper, Brosschot, Van der Leeden, & Thayer, 2007), cardiovascular disease (Kubzansky et al., 1997) and somatic complaints (e.g., Brosschot & Thayer, 2004; Emmons & King, 1988; Rector & Roger, 1996). These findings support the 'perseverative cognition hypothesis' (Brosschot et al., 2006). According to this hypothesis, perseverative thoughts prolong physiological activation beyond the presence of actual stressful situations. Whereas acute physiological changes in response to an actual stressor are useful in enabling a person's behavioral responses to stress (i.e., fight or flight), the prolongation of this physiological activation caused by perseverative thoughts adds to the

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total load, or 'wear and tear' (McEwen & Sapolsky, 1995) that stressful events have on somatic well being. This prolonged physiological activation eventually leads to a pathogenic state and somatic problems (Brosschot et al., 2006). In addition, the negative affectivity related to perseverative thoughts may increase the attention of adults and children for internal signals, and to interpreting them more negatively. According to the symptom perception hypothesis of Pennebaker (1982), this will increase the likelihood that physical symptoms are perceived as somatic complaints.

Little research has been conducted with the aim of assessing the effects of perseverative thoughts on the experience of somatic complaints in middle childhood (age nine to thirteen). Only recently, a longitudinal relationship between perseverative thoughts and children's somatic complaints has been demonstrated (Jellesma, 2008). Previous research shows that somatic complaints are quite common in childhood (with about 25% of the children experiencing pain on a regular basis; Perquin et al., 2000) and often are not fully explained by medical conditions (Croffie, Fitzgerald, & Chong, 2000; Goodman & McGrath, 1991). This indicates that more research into the relation between perseverative thoughts and somatic complaints in childhood is warranted, in particular on the impact of interventions. If interventions reducing perseverative thoughts also lead to a reduction in the number of somatic complaints, a causal link between perseverative thoughts and somatic complaints would be supported.

The theoretical base for such interventions was provided by Borkovec and colleagues who also examined them in adults (Borkovec, Wilkinson, Folsensbee, & Lerman, 1983). According to the stimulus control theory and treatment of worry, the positive effects of a worry postponement intervention can be explained as follows. Perseverative thoughts are a secondary cognitive reaction that is learned as a way of coping with a primary reaction to environmental stimuli. For example, a situation elicits a fearful response (primary) and the person subsequently starts to worry (secondary). The secondary response has the function of avoiding future trauma/negativity. Perseverative thoughts, however, by definition are negative and recurrent and therefore are unlikely to give rise to effective problem-solving. Instead, perseverative thoughts are apt to elicit more negative responses that include fear and tension. A solution is to control the perseverative thoughts by monitoring them and postponing the thoughts to a limited period during the day. *While the primary aim of the postponement module was to help the patient regain control of and reduce worry, its use in non-patients is actually based on another theoretical principle. By postponing worry, the total amount of worrying would be reduced along with the total psychophysiological load, resulting in a reduction in somatic complaints.*

Initial support for a community based intervention of perseverative thoughts has been found for adolescents. Brosschot and Van der Doef (2006) tested a relatively straightforward intervention to reduce 16- to 17-year-old adolescents' perseverative thoughts. They asked them to postpone their worries during the day to a half hour in the evening in which they were allowed to worry. The postponement intervention had a positive impact on the adolescents: compared to a control sample who only recorded their worry frequencies and duration, the adolescents who were instructed to postpone their worries, reported shorter durations of worry episodes, and also fewer somatic complaints. This study supports the perseverative cognition hypothesis and provides initial support for an intervention that seems to reduce perseverative thoughts and subsequent somatic complaints in an efficient way.

The aim of the present study was twofold. First, we examined the relation between perseverative thoughts and somatic complaints in children. Second, we evaluated the effects of a modified postponement intervention for perseverative thoughts on children aged

9–13, using as outcomes perseverative thoughts, internalizing negative emotions and somatic complaints. Similar to the findings of Brosschot and Van der Doef (2006) we expected girls to report higher levels of perseverative thoughts and somatic complaints than boys, but the effect of the postponement to be independent of gender. We aimed to replicate the finding of Brosschot & Van der Doef that the relationship between duration of (state) perseverative thought and somatic complaints was not fully moderated by trait anxiety or trait perseverative thought and that the effects of the intervention on somatic complaints were in fact due to the durations of children's perseverative thoughts. We also verified this relation for internalizing negative emotions. Finally, we measured both the frequency and duration of the perseverative thoughts, but as the instruction for children was to stop and postpone their perseverative thoughts rather than prevent them from occurring, we expected to find a reduction in the duration only.

Method

Participants

Children from grades 7 and 8 from seven primary school participated in this study. We received written parental consent for 227 children. The response rate in the postponement group was 74% and in the control group this was 78%. However, 16 children in the postponement group and 8 children in the control group did not keep their diaries and 1 child in the postponement group was absent for the second assessment of internalizing negative emotions and somatic complaints. These children did not differ from the other children in their age, trait perseverative thoughts, or pre-intervention scores on somatic complaints and internalizing negative emotions ($\alpha > .10$). The sample consisted of 54 boys and 84 girls in the postponement condition and 44 boys and 45 girls in the control condition, aged between 9 years 10 months and 13 years 1 month (mean age = 11.4 years, $SD = 0.70$). The gender difference for the postponement condition was significant: $\chi^2(1) = 6.52, p = .01$. Gender was therefore controlled in the analyses (See Table 1 for background information on the participating schools.).

Procedure

Seven primary schools in the surroundings of Leiden participated. We expected participation rate to be lower in the postponement condition because of greater demands on the children. For this reason, we randomly assigned four schools to the postponement condition and three schools to the control condition. The reason for randomization at the school level was to ensure that postponement instructions would not be known to children in the control condition. All schools approached agreed to participate. All parents of children in grades 7 (age 9–11) and 8 (age 11–13) received an informed consent letter. Only children with written parental consent participated in the study. The study was carried out in the fall of 2008.

Starting on a Thursday, children recorded their perseverative thoughts for 7 days, in a diary given to them for this purpose (Appendix 1). Previous studies have confirmed that diary entries of children aged nine years and older provide valid information about internal states such as anxious thoughts (Beidel, Turner, & Fink, 1996; Metsahonkala, Sillanpaa, & Tuominen, 1997). The Wednesday before recording in the diaries began, we explained to the children what perseverative thoughts are. We used the Dutch word "zorgen" to refer to perseverative thoughts, the meaning of which is similar to worrisome or troublesome thoughts. This word is commonly used by children in the Netherlands (see below for a definition we gave to the subjects). Children were also trained in how to use the

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