Somatic complaints in childhood: How they are related to children's emotional and social functioning

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Chapter 2
Somatic complaints and health care use in children: Mood, emotion awareness and sense of coherence

In this study we compared several aspects of the emotional functioning of schoolchildren reporting very few somatic complaints (*n*=59), schoolchildren reporting many somatic complaints (*n*=61), and a clinical group of children with functional abdominal complaints who visited the outpatient clinical of a hospital (*n*=33). The children had an average age of 10.6 years. We studied whether general moods (happiness, anger, fear, and sadness), symptoms of depressiveness, emotion awareness, and sense of coherence contributed to group classification. Eighty-three percent of the schoolchildren reporting very few somatic complaints were identified correctly on the basis of better emotional functioning. However, there was little difference in the emotional functioning of schoolchildren with many somatic complaints and that of the clinical group. We concluded that the variables studied are valuable for differentiating children who are troubled by somatic complaints from children experiencing few somatic complaints. The results stress the existence of emotional problems in children reporting many somatic complaints.

Jellesma, F.C., Rieffe, C., Meerum Terwogt, M., Kneepkens, C.M.F. (2006). Somatic Complaints and Health Care Use in Children: Mood, Emotion Awareness and Sense of Coherence. *Social Science and Medicine, 63,* 2640-2648.

INTRODUCTION

Somatic complaints, such as abdominal pain and headache, are common in children (Perquin, Hazebroek-Kampschreur, Hunfeld, Bohnen, van Suijlekom-Smit, Passchier et al., 2000; Petersen, Bergstrom, & Brulin, 2003; Roth-Isigkeit, Thyen, Raspe, Stoven, & Schmucker, 2004). Moreover, there seems to be an increase in prevalence of somatic complaints during early childhood, (Perquin et al.; Ramchandani, Hotopf, Sandhu, Stein & ALSPAC study team, 2006) with a peak in middle childhood and early adolescence (Perquin et al), which is accompanied by an increase in health care utilization (Roth-Isigkeit et al.). However, a medical cause for these complaints is rarely found (Croffie, Fitzgerald, & Chong, 2000; Roth-Isigkeit, et al.). Furthermore it has consistently been shown that negative moods are related to more somatic complaints (Campo, Bridge, Ehmann, Altman, Lucas, Birmaher et al., 2004; Dorn, Campo, Thato, Dahl, Lewin, Chandra et al., 2003; Egger, Costello, Erkanli, & Angold, 1999; Rieffe, Oosterveld, & Meerum Terwogt, 2006). These findings indicate that children's emotional functioning is related to somatic complaints. Nevertheless, the current knowledge about the emotional functioning of children with somatic complaints is rather limited, especially concerning differences between children who receive medical health care and peers with many somatic complaints from a non-clinical population. The aim of the current study was twofold. The first objective was to provide more knowledge about differences in the emotional functioning of children who report many somatic complaints compared to children who report few somatic complaints. The second objective of this study was to find out whether children in a clinical (medical) population can be discriminated from peers in non-clinical populations by certain aspects of their emotional functioning. This information can be helpful in adjusting existing treatment programs, but also in the prevention of somatic complaints and perhaps even in the prevention of fruitless medical examinations.

The finding that psychological factors are related to somatic complaints can be understood from a biopsychosocial perspective. Somatic changes are thought of as a key component of emotional or affective experiences. Damasio even argues that emotional states are defined by: "changes within the body proper, e.g., viscera, internal milieu, and within certain sectors of the brain, e.g. somatosensory cortices; neurotransmitter nuclei in the brain stem" (p.84, 1998). The biological changes (or their representation in the central system) are considered as essential for adaptive behavior, decision making and learning. More elaborate information on the neurological and bodily responses to aversive events can be found elsewhere (e.g. Carrasco & Van de Kar, 2003; Damasio, 1998; Tsigos & Chrousos, 2002). What is relevant to the current context is that the emotional neuro-physiological reactions can also give rise to somatic complaints: In the long run, these changes can cause organic dysfunction, for instance in the gastrointestinal system, (Bhatia & Tandon, 2005) and suppression of the immune system (Segerstrom & Miller, 2004).

Which coping strategies are adaptive will obviously depend on characteristics of the emotion evoking situation for instance whether the outcome can be controlled or not (Fields & Prinz, 1997). In the current study we did not focus on the type of coping strategies children use, but instead focused on two aspects of children's emotional functioning that might promote inefficient coping.

First, we looked at the *appraisal* component of negative situations. The extent to which negative situations are appraised as stressful and uncontrollable is reflected in a low 'sense of coherence' (Antonovsky, 1993), which refers to difficulty with understanding the meaning of situations, making sense of them and controlling them. Previous study results show that people perceiving a strong sense of coherence report better mental health (such as less depression and anxiety) and better physical health (Geyer, 1997; Pallant & Lae, 2002). Although the strength of the relation between sense of coherence and measures of mental health has raised questions about overlap of constructs in the past (e.g. Geyer), more recent results have proven that sense of coherence is an independent concept (Cohen & Savaya, 2003). Nevertheless, no study has yet been conducted to determine whether children with many somatic complaints appraise negative situations as stressful and uncontrollable. It is sometimes assumed that sense of coherence does not reach stability until the age of approximately 30 (Torsheim et al., 2001). Therefore, sense of coherence measured in children may be less trait-like. However, this does not mean that sense of coherence has less influence on children's health.

Second, a precondition for efficient coping is an adequate *understanding* of the emotional experience. After all, incomplete or incorrect understanding limits the possibilities of finding a suitable solution, even when appropriate strategies to accomplish that solution, are in principle available to the child. For instance, when own emotional states are not acknowledged, the possible emotion-focused solutions - strategies that enable you to improve your mood state even when the problem itself cannot really be altered - will be ignored as well. In 1973, Sifneos noticed that his patients with somatic complaints had difficulty putting their emotions into words, which he called 'alexithymia'. Today it has consistently been demonstrated that poor emotion awareness (difficulty recognizing and analyzing emotions) is related to more somatic complaints in adults as well as in children in a normal population (De Gucht, Fischler, & Heiser, 2004; Grabe, Spitzer, & Freyberger, 2004; Rieffe, et al., 2006). However the emotion awareness of children in a clinical, medical population has not yet been studied.

In this study we compared the moods, symptoms of affective disorder (depression), sense of coherence and emotion awareness of three groups of children: children visiting a hospital outpatient clinic because of abdominal complaints, regular school children who report many somatic complaints, and a contrasting group of school children with few complaints. We decided to use a clinical group with functional abdominal complaints, because these complaints are highly prevalent in school-aged children (Catto-Smith, 2005; Perquin, et al., 2000). Furthermore, we analyzed which variables contributed to the differentiation of the three groups and how well group membership could be predicted by aspects of

children's emotional functioning. We expected that the children with few complaints would be differentiated from the other groups quite distinctly (by fewer negative moods, fewer symptoms of affective disorder, better emotion awareness and greater sense of coherence), whereas this difference would be less distinct for the children with many complaints from the school population and the clinical population. Though the use of self-report questionnaires in childhood is very common, the questionnaires that were used in this study relied on the participants' ability to self-reflect, which increases with age and might not yet be fully developed in young children. In order to control for this, we also examined the possible effect of age on children's responses.

METHOD

PARTICIPANTS AND PROCEDURE

The clinical group consisted of 33 children (17 boys, 16 girls, M = 10 years and 5 months, SD = 16 months, age range 8 years and 5 months - 13 years and 5 months), who were attending the outpatient clinic of the VU University Medical Centre and were diagnosed with functional abdominal pain and/or constipation. The children were seen individually after a visit to the outpatient clinic of the hospital.

The groups from the non-clinical population were derived from two regular primary schools. They were selected on basis of their scores on the Somatic Complaint List (SCL; see Measurements): the children who scored high on the SCL (highest 30 %; 30 boys, 31 girls, *M* = 10 years and 7 months, *SD* = 14 months, age range 8 years and 6 months - 12 years and 5 months) and the children that scored low on the SCL (lowest 30%; 33 boys, 26 girls, M = 10 years and 7 months, SD = 16 months, age range 8 years and 7 months – 12 years and 9 months). The questionnaires were handed out in the classroom during normal school hours. It took the children 45 to 60 minutes to complete the questionnaires. It was carefully observed whether the children remained motivated and focused during the complete session. This appeared to be the case. Moreover, we had less than 1% missing data and there were no aberrant patterns in the answers given to questions near the end of the session. Afterwards, two groups of children were selected on basis of the SCL, and these data were further analyzed. Participation was on a voluntary basis and parental consent was obtained.

MEASUREMENTS

Somatic Complaints (SCL)

Somatic complaints were assessed by the Somatic Complaint List (Rieffe, et al., 2006). This questionnaire consists of 10 somatic complaints that are common in children (e.g. abdominal pain, dizziness and headache). Children were asked to fill out each item on a Likert-type scale (0 = never, 1 = sometimes, 2 = often, e.g. 'I never/sometimes/often have a headache'). Previous research (Rieffe, et al., 2006) has indicated that the internal consistency of the SCL is good (α = .77), which was confirmed in this study (α = .86). The schoolchildren were also asked to report for

each item whether they had visited a General Practitioner because of that specific somatic complaint.

Mood (MQ)

The Mood Questionnaire was used to assess children's self-reported mood (MQ; Rieffe, et al., 2006). The MQ, developed for children, consists of four scales: Happiness, Anger, Fear and Sadness, each represented by four items. We asked the children to indicate how they had been feeling recently. Four neutral items were added to compensate for the over-representation of negative items. Including these items, the questionnaire consists of 20 items on a Likert-type scale (0 = never, 1 = sometimes, 3 = often, e.g. 'I never/sometimes/often feel angry'). Previous research has shown an internal consistency of each subscale between .75 and .90 (Rieffe, Meerum Terwogt, & Bosch, 2004; Rieffe, et al., 2006), which was confirmed in this study (α = .78-.82).

Depression (CDI)

A Dutch translation of the Children's Depression Inventory (Kovacs, 1985) was used to identify self-reported symptoms of depression. The scale contains 32 items. Each item consists of three statements graded in order of increasing severity from 0 to 2. An example of an item is: "I never feel alone/I often feel alone/I feel alone all the time'. Children select the item that characterized them best during the past two weeks. Timbremont and Braet (2001) found good test-retest reliability over a period of 1 month (r = .79) and internal consistency (α = .79) for children aged 10 to 12, which was confirmed in this study (α = .83).

Sense of Coherence (SOC-13)

A translation of the Sense of Coherence Scale (SOC-13) by Torsheim, et al. (2001) was made for the benefit of this study. In the formulation of the items, the age of the respondents was taken into account as much as possible. The questionnaire consists of 13 items that are filled out on a Likert-type scale (1= very often, 2 = often, 3 = sometimes, 4= seldom, 5 = never). Example items are: 'How often do you have the feeling that you are being treated unfairly?' "How often do you have the feeling that the things you do everyday are not really important?" and "How often does it happen to you that you have the feeling that you don't know exactly what's about to happen?" Two of the thirteen items were positively formulated, for which a different five-point scale was used (1= like it a lot to 5 = don't like it at all; scores were recoded). The internal consistency of the overall factor is good (α = .83). Another study among 700 Dutch school children confirmed the psychometric properties of the questionnaire, and also showed a good test-retest reliability over a 6 month period (r = .46). The validity of the scale was supported by negative relationships with symptoms of depression (-.54); fear of negative evaluation (-.55); social avoidance and distress specific to new situations (-.39); and generalized social avoidance and distress (-.38; Jellesma, Meerum Terwogt, & Rieffe, 2006).

Emotion Awareness (EAQ)

The Emotion Awareness Questionnaire (Rieffe, Meerum Terwogt, Petrides, Cowan, & Tolland, 2007) was used to assess children's emotion awareness. This questionnaire is developed for children and we used four scales: Differentiation of

emotions (7 items), Communication of emotions (5 items), Bodily Symptoms (attention for the physiological effect of emotions or moods; 6 items) and Others (attention to the emotions of others; 7 items). Good emotion awareness (a high score) is reflected by better emotion differentiation, better communication, less awareness of the bodily sensations of emotions and more attention to emotions of others. The list consists of 25 items on a Likert-type scale (0 = not true, 1 = sometimes true, 2 = often true. An example of an item is: 'When I feel upset, I often talk to someone about it'. Nineteen items are negatively formulated and were rescored. Study results of Rieffe et al. have indicated that the EAQ correlates with related constructs, such as moods and worrying. The internal consistency of the subscales varied between α = .62 (Communication) and α = .76 (Bodily Symptoms). The internal consistency in the current study was roughly similar: internal consistency between α =.67 (Others) and α = .81 (Differentiation).

STATISTICAL ANALYSES

In the statistical analyses, we used a significance level of .05. We first analyzed the pattern of somatic complaints of the children with many complaints and the clinical group. Somatic complaints overall were compared with a Mann-Whitney U test, proportions of children reporting a specific complaint were compared using Pearson's Chi-Square. We then compared the three groups on all variables with a multivariate analysis. In order to verify whether age had any effect on the variables, we calculated correlations between age and all of the variables and used age as a covariate in the multivariate analysis of variance. The Tukey-Kramer test was used for post hoc paired comparisons between the groups, as recommended by Rafter, Abell and Braselton (2002) for unbalanced designs. We subsequently conducted a discriminant analysis to find out how well the groups could be discriminated by their emotional functioning and which variables are most valuable in this discrimination. The default values for entry were set at .05, the default for removal at .10. *Z*-approximation tests were used to assess whether the proportions of correctly identified children were above chance.

RESULTS

ANALYSIS OF THE PATTERNS OF SOMATIC COMPLAINTS

In line with the group selection, the clinical group and the schoolchildren with many complaints both reported more (serious) complaints compared to the children with few complaints (see Table 1). However, the clinical group still seemed to score a little lower compared to the schoolchildren with many complaints on the SCL, which was confirmed by a Mann Whitney U test, z = -2.22, p = .03. All children in the clinical group reported abdominal pain. As could be expected, for most children in the clinical group abdominal pain was not the only complaint they had; in particular tiredness and headache were quite common (94% and 85 % respectively). However the schoolchildren with many complaints (top 30% on the SCL) showed an even more diverse pattern of complaints. For instance, 82%

reported 'feeling weak' sometimes or often compared to only 61% of the clinical group, $\chi^2(1) = 5.14$, $p = .02$. Abdominal pain was also a frequently reported complaint among the schoolchildren with many complaints: 98% sometimes have abdominal pain and 54% often. Only a relatively small percentage of the schoolchildren with few or many complaints had visited a General Practitioner: 20.3% and 37.7% respectively, $\chi^2(1, N = 120) = 4.38$, $p = .04$.

Table 1
Means and standard deviations of the clinical group, the children with many somatic complaints and the children with few complaints on all dependent variables

	Clinical group	Many Somatic Complaints	Few Somatic Complaints
Variable	*M (SD)*	*M (SD)*	*M (SD)*
Somatic Complaints	9.27 (1.30) $_a$	10.75 (1.76) $_b$	2.53 (1.30) $_c$
Mood States			
Happiness	1.81 (0.30)$_{ab}$	1.68 (0.36)$_a$	1.91 (0.21)$_b$
Fear	0.87 (0.45)$_a$	0.86 (0.46)$_a$	0.55 (0.40)$_b$
Anger	0.93 (0.47)$_a$	0.94 (0.32)$_a$	0.64 (0.41)$_b$
Sadness	0.86 (0.35)$_a$	0.86 (0.40)$_a$	0.45 (0.39)$_b$
Depressiveness	1.37 (0.23)$_a$	1.36 (0.21)$_a$	1.18 (0.15)$_b$
Emotion Awareness			
Differentiation of Emotions	1.10 (0.47)$_a$	1.28 (0.45)$_a$	1.62 (0.36)$_b$
Communication of Emotions	0.88 (0.50)$_a$	0.92 (0.55)$_a$	1.20 (0.44)$_b$
Awareness of Bodily Symptoms	0.87 (0.39)$_b$	0.60 (0.37)$_a$	1.04 (0.45)$_b$
Others	1.39 (0.34)$_a$	1.48 (0.39)$_a$	1.51 (0.36)$_a$
Sense of Coherence	3.48 (0.63)$_a$	3.35 (0.58)$_a$	4.13 (0.54)$_b$

Note. Means in the same row that do not share subscripts differ at $p < .05$

MULTIVARIATE ANALYSIS OF VARIANCE

The means and standard deviations of the three groups on all 10 dependent variables are shown in Table 1. There were no significant correlations between age and the other variables (somatic complaints, moods, depression, aspects of children's emotion awareness or sense of coherence). A multivariate analysis of variance across all 10 dependent variables (happiness, anger, sadness, fear,

depression, Differentiation of emotions, Communication of emotions, Bodily Symptoms, Others and SOC-13) with age as a covariate, revealed a significant difference between the groups, Wilks' $\Lambda = .53$, $F(20, 280) = 5.18$, $p < .01$, partial $\eta^2 = .27$. There was no significant age effect, Wilks' $\Lambda = .91$, $F(10, 140) = 1.34$, $p = .22$.

As expected, the clinical group and the schoolchildren with many somatic complaints reported more negative moods on the anger, sadness and fear scale of the MQ and on the CDI; more difficulty differentiating their emotions and communicating about them (subscales EAQ); and a lower sense of coherence compared to children with few complaints, (all differences $p < .01$). Although the schoolchildren with many complaints reported being less happy compared to the children with few complaints ($p < .01$), the clinical group did not significantly differ in reported happiness from the schoolchildren with many or few complaints. Unexpectedly, the schoolchildren with many complaints reported giving more attention to a link between emotion and bodily symptoms (subscale EAQ) compared to the children with few complaints *and* the clinical group, $p \leq .01$. However, the score on the Somatic Complaint List was a significant covariate in this difference in attention between the schoolchildren with many complaints and the clinical group, $F(1, 94) = 10.90$, $p < .01$, partial $\eta^2 = .11$. After controlling for somatic complaints, the schoolchildren with many complaints and the clinical group hardly differed in the reported attention to the link between emotions and bodily symptoms, $F(1, 94) = 5.89$, $p = .02$, partial $\eta^2 = .06$.

DISCRIMINANT FUNCTION ANALYSIS

A stepwise discriminant analysis was performed to define the variables that provide the best discrimination between the groups. The four variables that significantly contributed to discrimination of the groups were SOC-13, Bodily Symptoms, Differentiation of emotions and Sadness. The results from the discriminant analysis are presented in Table 2. The overall Wilks' Λ was significant, $\Lambda = .57$, χ^2 $(8, N = 153) = 84.35$, $p < .01$ as well as the residual Wilks' Λ, $\Lambda = .90$, χ^2 $(3, N = 153) = 16.18$, $p < .01$. This indicates that a second discriminant function significantly contributed to the differentiation among the three groups after partialling out the effects of the first discriminant function. Sense of coherence was positively associated with the first function, whereas sadness showed a negative association. The second function was mainly determined by less awareness of the bodily sensations of emotion and less differentiation of emotions.

As can be seen by the group centroïds, the clinical group and the group of schoolchildren with many complaints were best discriminated from the children with few complaints by their negative scores on the first function. This reflects the previously described finding that both groups of children with many somatic complaints report less sense of coherence and more sadness compared to the children with few complaints. The three groups all had different profiles on the variables that contribute to the second function, as can be concluded by the mean scores earlier described. Children in the clinical group found it relatively difficult

to differentiate between emotions and reported relatively little attention to the bodily sensation of emotions. Therefore, they had a high score on the second function. The children with many somatic complaints on the other hand, also reported difficulty with emotion differentiation, but they appeared to be strongly aware of the bodily sensations of emotions. This is reflected in a lower score on the second function. The children with few somatic complaints scored reasonably low on the second function as well. However this was caused by their better ability to differentiate emotions, whereas they reported relatively little awareness of the bodily sensations of emotion.

Table 2
Results from the stepwise discriminant function analysis

	DISCRIMINANT FUNCTION [a]	
	Function 1 (eigenvalue = .58)	Function 2 (eigenvalue = .12)
STANDARDIZED DISCRIMINANT COEFFICIENT (CORRELATION WITH FUNCTION)[b]		
Variable		
Sense of Coherence	**.57 (.83)**	.27 (-.02)
Sadness	**-.36 (-.67)**	.18 (.23)
Differentiation of Emotion	.14 (.59)	**-.87 (-.68)**
Bodily Symptoms	.35 (.59)	**.68 (.55)**
Sense of Coherence	**.57 (.83)**	.27 (-.02)
GROUP CENTROIDS		
Group		
Clinical group	-.39	.62
Children with many somatic complaints	-.70	-.27
Children with few somatic complaints	.94	-.06

[a] Function 1 is the first function that contributes to group discrimination. Function 2 is the second function contributing to group discrimination after partialling out the effects of the first discriminant function.
[b] Variables that have a large association with the function are indicated by bold font.

We were able to correctly classify 67% of the individuals in our sample using the two discriminant functions, with a kappa coefficient of .49. The leave-one –out technique showed that we would correctly classify 62% of the cases with the classification procedure in a new sample. In our sample, 83% of the children were correctly categorized as belonging to the group of children with few complaints, which is well above chance, $p < .01$. However the percentage of correctly identified individuals in our sample was not above chance for the clinical group (55%) and the schoolchildren with many complaints (57%), $p = .73$ and $p = .31$ respectively.

DISCUSSION

In this study, we compared the emotional functioning of schoolchildren with few somatic complaints, schoolchildren with many somatic complaints and a clinical group of children with functional abdominal pain or constipation. We found that the clinical group closely resembled the schoolchildren with many somatic complaints: both groups reported more negative moods, more symptoms of depression, more difficulty in emotion differentiation and communication and less sense of coherence compared to children with few somatic complaints. These results were confirmed in our attempt to classify the three groups on the basis of their emotional functioning. Although this worked quite well for the children with few somatic complaints, it was not possible to determine which children belonged to the clinical group and which children to the group of schoolchildren with many somatic complaints just on the basis of the studied variables. Other, as yet unknown, discriminating factors are influential. The way a child's symptoms are attributed by children and their parents, as mentioned in the discussion below, might for instance be a possible candidate.

The discriminant function that distinguishes the group with few complaints from both other groups is mainly determined by a combination of sadness and poor sense of coherence. As argued in the introduction, negative mood states with a chronic character can affect health because of the neuropsychological changes they involve. Indeed children with many somatic complaints reported higher scores not only on sadness, but also on anger and fear. The low sense of coherence scores indicate that appraisal of negative situations as unpredictable and uncontrollable is also connected to somatic complaints. Such appraisal may lead to maladaptive or ineffective coping. Future research might pursue the nature of the relation between appraisal of negative situations, ineffective coping, emotion and somatic complaints.

The only significant difference we found between the clinical group and the schoolchildren with many somatic complaints was in their awareness of the bodily sensations of emotions. We found that children with many somatic complaints are strongly aware of the bodily sensations of emotions, which is in line with previous research (Rieffe, Meerum Terwogt, & Tolland, 2004). Nonetheless, both the group of school children with few complaints and the clinical group reported being less aware of the physiological correlates of emotions. However, as we will argue, this is caused by different processes.

Compared to children with many somatic complaints, children with few complaints reported a lower frequency of negative emotions. Earlier (Rieffe Meerum Terwogt, & Tolland, 2004) it was found that they also indicated that their emotional experiences were less intense. Whereas physiological sensations predominate especially in strong emotions, for children with mainly moderate emotional reactions, the temporal relation between physiological sensations and emotions is probably less marked. For the clinical group it can be assumed that the intensity of their emotions is as strong as those of the schoolchildren with many

complaints. Therefore, we presume that the physiological sensations of emotions will be equally noticeable for both. However, the relatively low score of the clinical group on the somatic complaints list indicates that their complaints are more focused than those of the non-clinical group with many complaints. Pennebaker (2000) already argued that some people have a tendency to attribute the physiological phenomena that accompany emotions to an organic problem. A pattern of complaints that is restricted to, for instance, a combination of abdominal pain and tiredness (the most common combination within the clinical group) is much easier to interpret as symptoms of a specific organic dysfunction than the variety of complaints reported by the schoolchildren. Moreover, such an organic interpretation might be at least partly correct for the children in the clinical population. As mentioned in the introduction, frequent stress actually causes physiological changes and eventually can even cause permanent damage to the weakest part of the body. It seems plausible that all subsequent emotional stress will mainly surface in that same part of the body. The clinical group may be different from the non-clinical group in the sense that a relatively large number of children in this group already have developed such a marked weakness. Indeed, when taking the score on somatic complaints into account, the difference between the clinical group and the schoolchildren with many somatic complaints in their awareness of physiological sensations becomes negligible. In any case, a general organic attribution of physiological sensations and symptoms removes attention from the direct link between emotions and bodily symptoms. Moreover the difference between an emotion and an organic interpretation could also explain why the clinical group seems to be slightly happier than the schoolchildren with many somatic complaints. An organic interpretation has the advantage that it can protect the level of self-worth; it is a way to avoid admitting that one is not able to handle stressful events. Consequently, there is still ample room for positive experiences. Of course, the idea that you are ill does not really help, but the group of school children with many complaints suffers from the same problems and have not (as yet) sought help. The clinical group at least has the hope that their doctors might relieve their problems in time. Of course, further research is necessary to substantiate all these speculations.

In conclusion, the results indicate that emotional functioning can be of great importance in understanding why some children have many somatic complaints, but which children end up in the medical circuit mostly depends on other factors. In future research parents could be used as an extra informant to find out whether their ideas about the somatic complaints are perhaps better predictors of which children end up in the medical circuit.

One limitation of this study was the use of only one source of information for the children's somatic complaints and emotional functioning. Although children's own experience seems most important when considering their well-being, they rely on their parents when seeking medical help. In particular, the causal attributions of parents and children for complaints in the child should be addressed. However, other factors could also influence the search for medical help, such as the attitude

of the GP towards common somatic complaints, or the burden the complaints put on the child's functioning. Longitudinal research will be needed to understand causal relations between these kinds of factors and the search for medical health care. Longitudinal research is also needed to understand to what extent children's emotional functioning can be considered as an etiological factor for somatic complaints in children. Nonetheless, whatever the causal direction, the findings of this study indicate that children complaining of many somatic complaints are often in need of help as regards to their emotional functioning.