Available online at www.sciencedirect.com
ScienceDirect
Personality and Individual Differences 43 (2007) 95–105
PERSONALITY AND INDIVIDUAL DIFFERENCES
www.elsevier.com/locate/paid

Psychometric properties of the Emotion Awareness Questionnaire for children

Carolien Rieffe [a,*], Mark Meerum Terwogt [b], K.V. Petrides [c], Richard Cowan [c], Anne C. Miers [a], Abigail Tolland [c]

[a] *Developmental Psychology, Faculty of Social and Behavioral Sciences, Leiden University, P.O. Box 9555, 2300 RB Leiden, The Netherlands*
[b] *Developmental Psychology, Vrije Universiteit, Amsterdam, The Netherlands*
[c] *Institute of Education, University of London, UK*

Received 27 January 2006; received in revised form 2 August 2006
Available online 4 January 2007

Abstract

In order to broaden the alexithymia concept, we identified six aspects in a newly developed questionnaire for children which aims to measure emotion awareness: Differentiating Emotions, Verbal Sharing of Emotions, Bodily Awareness, Acting Out Emotions, Analyses of Emotions, and Others' Emotions. First, the six-factor structure of this Emotion Awareness Questionnaire was identified in children (692 children, 9–16 years old), although the scale Acting Out Emotions showed poor psychometric properties. Second, the predictive validity of the Emotion Awareness Questionnaire showed promise with respect to self-reported somatic complaints (in samples from two different countries, the UK and the Netherlands), depression and worry. Only Acting Out Emotions did not contribute to any of the criterion variables whilst Bodily Awareness and Others' Emotions contributed in the unexpected direction. It is proposed that the Emotion Awareness Questionnaire could help to identify which specific elements of emotional (dys)functioning are related to different kinds of psychological problems.

Keywords: Alexithymia; Emotion awareness; Children; Health

* Corresponding author. Tel.: +31 715273674.
E-mail address: crieffe@fsw.leidenuniv.nl (C. Rieffe).

0191-8869/$ - see front matter © 2006 Elsevier Ltd. All rights reserved.
doi:10.1016/j.paid.2006.11.015

1. Introduction

Emotions elicit automatic action patterns that are functional to survival, but acting upon this primitive emotional behaviour will create problems in the social environment. Our cognitive abilities present the opportunity to attenuate this primitive program and find a more adaptive reaction pattern. By making the emotion the object of our attention, the automatic program is interrupted and open for control activities (Levenson, 1999). This demonstrates that emotion awareness is required before coping responses can be applied to a situation. Moreover, a precise and elaborate awareness – i.e. an analysis of the exact nature of the emotion, the eliciting antecedents and the possible consequences – enhances the likelihood of finding a more adaptive approach to the situation. This explains why therapists highly value it when their patients show awareness of their own emotions. Several decades ago, Sifneos (1973) observed that patients suffering from classic somatic diseases have difficulties in identifying and describing their own feelings. Sifneos labelled this phenomenon 'alexithymia'. Later on, similar characteristics were described in patients with eating disorders (Bruch, 1973), patients with post-traumatic stress disorders (Krystal, 1968), drug addicts (Kristal & Raskin, 1970) and panic disorder (Nemiah, 1984). Recently, alexithymia has also been linked with autism (Hill, Berthoz, & Frith, 2004).

At present, the most widely used alexithymia measure is the Toronto Alexithymia Scale (TAS-20; Bagby, Parker, & Taylor, 1994). The TAS20 measures three factors: difficulties in identifying one's own feelings, difficulties in describing these feelings to others, and the third factor "externally oriented thinking". This third factor is based on Sifneos' observation that psychosomatic patients are preoccupied with details of objects and events in the external environment. In many studies, the first two factors show a good predictive value, but the internal consistency and the predictive value of the third factor fall behind (overview Kooiman, Spinhoven, & Trijsburg, 2002). This pattern also appeared in an attempt to make a similar questionnaire for children (Rieffe, Oosterveld, & Meerum Terwogt, 2006). Yet, emotion awareness might include more aspects than those reflected in the traditional alexithymia questionnaires, such as the TAS20. We identified six aspects in a newly developed questionnaire for children, the EAQ (Emotion Awareness Questionnaire), to measure emotion awareness (Table 1), which is partly based on the previous alexithymia questionnaire for children (Rieffe et al., 2006) as explained below.

The EAQ scale "*Differentiating Emotions*" is based on the identification factor of the TAS20 and on the equivalent scale in the children's version of this questionnaire (Rieffe et al., 2006), but some adjustments have been made. Firstly, all literature on adults and children shows positive associations between somatic complaints and negative moods, depression and/or anxiety (Jellesma, Rieffe, Meerum Terwogt, & Kneepkens, 2006; Kooiman et al., 2002). It is thus clear that although people with somatic complaints can identify their feelings, the core problem seems to lie in the ability to analyse them, differentiate between various emotions and understand their causes (Rieffe, Meerum Terwogt, & Jellesma, in press). For example, "feeling bad" is a broad negative connotation that might refer to a constellation of negative emotions, whereas "anger", "sad" or perhaps "jealous" reflect action tendencies and define the link between the individual and the environment (Frijda, 1986; Rieffe et al., in press). Therefore, the TAS20 factor "identifying one's feelings" has been relabelled "*Differentiating emotions*" and extra items have been formulated to include the ability to differentiate and understand the causes of one's emotions.

Table 1
Items from the English version of the EAQ and PCA factor loadings by sample

Item wording	Loading	
	UK	NL
	$n = 393$	$n = 299$
Differentiating emotions		
1.1 I am often confused or puzzled about what I am feeling. R	.605	.447
1.2 It is difficult to know whether I feel sad or angry or something else. R	.709	.443
1.3 I never know exactly what kind of feeling I am having. R	.515	.395
1.4 When I am upset, I don't know if I am sad, scared or angry. R	.648	.568
1.5 Sometimes, I feel upset and I have no idea why. R	.580	.500
1.6 I often don't know why I am angry. R	.540	.615
1.7 I don't know when something will upset me or not. R	.375	.481
Verbal sharing of emotions		
2.1 When I feel upset, I often talk to someone about it.	.566	–
2.2 When I am upset about something, I often keep it to myself. R	.554	–
2.3 I can easily explain to a friend how I feel inside.	.464	.570
2.4 I find it difficult to explain to a friend how I feel. R	.536	.717
2.5 I find it hard to talk to anyone about how I feel. R	.678	.731
2.6 I want other people to understand when I am upset or angry.	–	–
Bodily awareness		
3.1 When I am scared or nervous, I feel something in my tummy.	.604	.548
3.2 When I feel upset, I can also feel it in my body.	.640	.623
3.3 I don't feel anything in my body when I am upset or nervous. R	.550	.613
3.4 My body feels different when I am upset about something.	.680	.657
3.5 When I am sad, my body feels weak.	.561	.577
3.6 I can feel my body tensing when I become angry or upset.	.373	.516
3.7 When I feel my heartbeat, I know that I am nervous or scared.	–	–
Acting out emotions		
4.1 When I am angry, I just let it out.	.468	.413
4.2 I always try to suppress my anger as fast as possible. R	–	.407
4.3 When I am upset, I like to show it to everybody.	.419	.611
4.4 I feel ashamed when other people notice that I am upset. R	–	–
4.5 I do not like strong feelings. R	–	–
4.6 I like to show my feelings as they happen.	.616	.517
Analyses of emotions		
5.1 When I am angry or upset I try to understand why.	.493	.584
5.2 My feelings help me to understand what has happened to me.	.579	.494
5.3 When I have a problem, it helps me when I know how I feel about it.	.608	.585
5.4 It is not important to know how I feel about things. R	–	–
5.5 When I feel sad, I immediately think about something else on purpose. R	–	–
5.6 When I feel nervous, I do not want to think about it. R	–	–
5.7 It is important to me that I understand how I feel.	.529	.561
Attending to others' emotions		
6.1 It is important to know how my friends are feeling.	.660	.566
6.2 I don't want to know how my friends are feeling. R	.575	.474
6.3 If a friend in my class is upset, I try to understand why.	.590	.542

(*continued on next page*)

Table 1 (*continued*)

Item wording	Loading	
	UK	NL
	$n = 393$	$n = 299$
6.4 I don't care about how my friends are feeling inside. R	.628	.730
6.5 If a friend is upset, I just look the other way. R	.479	.369
6.6 I always know how my friends are feeling.	.494	.530
6.7 I do not like it when my friends show how they are feeling. R	.423	–

The English and Dutch questionnaires and the full rotation matrix per data set are available on request.
Note. Items marked with R are reversed-scored.
Italic items were removed after the factor analyses.

Secondly, the identification factor of the TAS20 also contains items like "I feel things in my body that even doctors don't understand". We preferred to distinguish between identification of the subjective feeling state (usually termed "emotion" in daily use, Scherer, 2000) and the identification of physiological emotion phenomena. Bucci's (1997) 'multiple code theory' holds that children develop non-verbal emotional schemata based on sensory, visceral, and kinaesthetic sensations before they can label these experiences in emotional terms. Moreover, Pennebaker's symptom perception hypothesis (1984) claims that somatic complaints are related to a tendency to misattribute physical reactions in an emotion-evoking situation to a medical cause. Therefore, the items that refer to physical sensations were removed from other scales and "*Bodily Awareness*" of physiological emotion phenomena was added as a separate scale to the EAQ. Logically, the symptom perception hypothesis would predict that somatic complaints and bodily awareness in emotion evoking situations are negatively correlated.

The EAQ scale "*Verbal Sharing*" is based on the TAS20 factor "difficulty describing feelings", but with the addition of a new EAQ scale "*Acting Out Emotions*" we aim to distinguish between communicating one's emotions, which can be done in an unemotional way, and the blunt expression of emotions, which is often nonverbal. Moreover, whereas communicating about emotional states is considered to be adaptive, the blunt expression, or simply acting out one's feelings has been shown to be maladaptive (Suveg & Zeman, 2004).

Finally, two extra scales "*Analyses of Emotions*" and "*Attending to Others' Emotions*" have been developed with the aim of identifying children's willingness to face their emotions and the emotions of others, respectively. An ineffective analysis of the emotional situation might reflect an inability, but it could also originate from a defensive attitude – neglecting emotion signals – as would be expected in people with more somatic complaints (Bonnano & Singer, 1990).

Our objective in this study is twofold: given that emotional awareness is shown to be relevant to many psychological problems besides physical health problems, the first aim was to broaden the alexithymia concept using a number of emotion awareness aspects that might have added value. Secondly, because no acceptable instrument is available for children aged ten years and over, an emotional awareness questionnaire was devised, appropriate for this age group. It is expected that the number of self-reported somatic complaints will negatively correlate with children's ability to differentiate between various emotions, their tendency to analyse their feelings and talk about

them, their attention to bodily symptoms of an emotional arousal and their attention to others' feelings, and positively with children's tendency to demonstrate their emotions. In order to test these predictions, questionnaires were given out to English and Dutch children and analysed separately. Additionally, we looked at the predictive validity of the Emotion Awareness Questionnaire (EAQ) for children by examining its association with depression and worrying in the UK sample. It was expected that the EAQ scales Differentiating Emotions, Verbal sharing, Others' Emotions, Bodily Awareness and Analyses of Emotions will show a negative relationship with depression and worrying and Acting Out Emotions a positive relationship.

2. Method

2.1. Participants

A total of 692 children and adolescents took part in this study. Participants from the UK and the Netherlands were recruited from three different schools in each country. All schools were selected to represent a broad mix of social class backgrounds. The UK sample consisted of 393 participants, including 196 boys and 197 girls with a mean age of 13.6 years (age range 11.1–16.3 years). The Dutch sample consisted of 299 children and adolescents, including 151 girls and 148 boys, with a mean age of 11.8 years (age range 9.8 to 14.2 years). Prior to conducting the study, permission to participate was obtained from parents.

2.2. Materials

The *Emotion Awareness Questionnaire (EAQ)* was developed with the aim of identifying how children and adolescents feel or think about their feelings. Preliminary Dutch and English versions were previously constructed in parallel by a team of child psychologists. A group of primary school teachers was involved to check the wording of the items for suitability and relevance to the selected age group. Any discrepancies were discussed and suggestions for improvements sent back to the team. The questionnaire was then revised according to the suggestions and sent back to the school for final approval. Based on the outcomes of the preliminary study, the current version of the EAQ was designed with a six-factor structure describing various aspects of emotional functioning that are discussed in the Introduction and consisting of a total of 40 items (Table 1). Some items are negatively formulated and thus reversed-scored. Respondents are asked to rate the degree to which each item is true about them on a three-point scale (1 = not true, 2 = sometimes true, 3 = often true).

The *Somatic Complaint List* (SCL; Rieffe, Meerum Terwogt, & Bosch, 2004; Rieffe et al., 2006) was developed with the aim of identifying how often children and adolescents experience and feel pain. Dutch and English versions were previously constructed in parallel. Consisting of 11 items, the SCL asks participants to rate on a 3-point scale (1 = never, 2 = sometimes, 3 = often) the frequency with which they experience certain bodily complaints, such as a stomach ache. Two of the items are positively formulated and are thus reversed-scored. This questionnaire has demonstrated good reliability among a sample of 740 children (alpha $>$ .75, Rieffe et al., 2004, 2006). This was replicated in the present study in both the UK and Dutch samples (Table 2).

Table 2
Internal consistency (Cronbach's Alpha) of the adapted EAQ, SCL, CDI and Worry Questionnaire by sample

Questionnaire	No. of items	UK ($n = 393$)		Dutch ($n = 299$)	
		Alpha	Inter-item correlation	Alpha	Inter-item correlation
EAQ scales					
Differentiating Emotions	6	.77	.36	.69	.27
Verbal Sharing of Emotions	5	.71	.33	.62	.24
Bodily Awareness	5	.74	.32	.76	.35
Acting Out Emotions	3	.49	.24	.51	.26
Analyses of Emotions	4	.67	.34	.67	.34
Others' Emotions	7	.75	.30	.68	.24
SCL (Somatic Complaint List)	11	.82	.30	.75	.25
CDI (Children's Depression Inventory)	26	.88	.21	–	–
Worry	10	.87	.41	–	–

Children's Depression Inventory (CDI; Kovacs, 1992) contains 27 items and is designed for children aged 8–15. Each item consists of 3 statements, from which children are asked to mark the statement that best describes them. The version presented comprised 26 items: the suicide item was omitted. The internal consistency of the scale was also adequate in this study (Table 2).

The *Worry Questionnaire* (Jellesma et al., 2006) reflects the tendency to dwell on a problem, instead of dealing with it in terms of solving or coping adaptively with the emotional impact of the situation. The questionnaire was translated for this study from Dutch to English by a team of developmental psychologists. A group of primary school teachers checked the wording of the items for suitability. The questionnaire comprises 10 items with good internal consistency (Jellesma et al., 2006). Respondents are asked to rate the degree to which each item is true about them on a three-point scale (1 = not true, 2 = sometimes true, 3 = often true). The internal consistency of the scale was also adequate in this study for the UK sample (Table 2).

2.3. Procedure

The same procedure was followed in the Netherlands and in the UK whereby questionnaires were administered in class in the participating schools. Before completing the questionnaires, the aims of the study were explained, highlighting that participation was voluntary and anonymous. Next, instructions about how to complete the questionnaires were read out. These had been agreed prior to the data collection. Testing time was approximately 30 min.

3. Results

3.1. Scale construction

The 40 items in the UK version of the Emotion Awareness Questionnaire (EAQ) were analysed via a principal axis factor analysis. Based on the Scree plot, the amount of variance accounted for, and the theoretical expectations of the study, six factors, explaining 42.32% of the total variance,

Table 3
The interfactor correlations of the EAQ by sample

	Different	Sharing	Bodily	Acting out	Analyses	Others'
UK sample (n = 393)						
Differentiating		.21**	−.42**	−.23**	−.13*	−.05
Verbal Sharing	.37**		−.29**	.01	−.08	.26**
Bodily Awareness	−.46**	−.15**		.14**	.45**	.25**
Acting Out	−.38**	.18**	.41**		.40**	.00
Analyses of Emotions	−.40**	.22**	.28**	.11*		.34**
Others' Emotions	−.07	.22**	.32**	.14*	.44**	
Dutch sample (n = 299)						
Differentiating		.21**	−.35**	−.18**	−.21**	−.02
Verbal Sharing	.24**		−.20**	.02	.04	.31**
Bodily Awareness	−.36**	.00		.20**	.43**	.19**
Acting Out	−.26**	.05	.26**		.31**	.05
Analyses of Emotions	−.34**	.10	.44**	.22**		.30**
Others' Emotions	−.05	.29**	.24**	.04	.26**	

Note, correlations in the left lower half include all items. Correlations in the right upper half are based on final scale constructions.
* $p < .05$.
** $p < .01$.

were extracted and rotated to simple structure through PROMAX algorithm ($k = 4$). The rotated factor solution showed that most items loaded on their keyed factor, as expected (Table 1). The interfactor correlation matrix in Table 3 shows that the six factors inter-correlated, as should be the case for a multifaceted construct.

The 40 items in the Dutch EAQ were analysed in the same way as the UK data. Six factors, explaining 40.71% of the total variance, were extracted and rotated through PROMAX ($k = 24$). The rotated factor solution showed that most items loaded on their keyed factor, as expected (Table 1). The inter-correlations between the six factors are given in Table 3.

In light of the similarity between the UK and Dutch factor analytic solutions (Table 1), six identical subscales were constructed by summing up the highest loading items. The internal consistencies for the six subscales are given in Table 2. With the exception of Acting Out Emotions, which comprised only three items, all other scales had either moderate or high alpha values. The Dutch alphas were generally in line with the UK values. The value for Acting Out Emotions was again problematic (.51), suggesting that this subscale is in need of additional items.

3.2. Predictive validity

Table 4 shows correlations between the six scales of the EAQ, the Somatic Complaint List (SCL), the depression questionnaire (CDI) and the Worry Questionnaire. The scales Differentiating Emotions, Bodily Awareness and Acting Out Emotions correlated with all other variables, but Bodily Awareness did so in the unexpected direction. Also Verbal Sharing showed the expected negative correlation, but only with the CDI and Worry. Analyses of Emotions correlated as expected with the CDI, but positively with the SCL in the Dutch sample. This is the only difference

Table 4
Correlations between the EAQ scales, SCL, CDI and Worry Questionnaire by sample

	UK ($n = 393$)			Dutch ($n = 299$)
	SCL	CDI	Worry	SCL
EAQ scales				
Differentiating Emotions	−.41**	−.39**	−.45**	−.40**
Verbal Sharing of Emotions	−.08	−.25**	−.18**	−.07
Bodily Awareness	.31**	.21**	.41**	.30**
Acting Out Emotions	.10*	.11*	.14**	.11*
Analyses of Emotions	−.05	−.21**	.09	.14*
Others' Emotions	.11*	−.01	.23**	.12*

* $p < .05$.
** $p < .01$.

between the correlations of the EAQ scales with the SCL between the UK and Dutch sample. And finally, Others' Emotions correlated positively with the SCL in both samples and with Worry in the UK sample.

To investigate whether the six scales representing emotion awareness showed independent contributions to the prediction of somatic complaints, depression and worry, multiple regression analyses were performed. The R^2_{adj} ranged from .18 (in the Dutch sample) to .29 for Worry in the UK sample (Table 5). These values are moderately high according to the empirically-derived guidelines suggested by Hemphill (2003), although we should bear in mind that his analyses were based on zero-order correlations, as opposed to the multiple correlations reported herein.

The standardized beta coefficients for the six scales are displayed in Table 5. It can be seen that Differentiating Emotions and Bodily Awareness contributed to the prediction of somatic complaints in both samples, whereas Verbal Sharing and Acting Out Emotions did not reach significance. Analyses of Emotions and Others' Emotions reached significance in the UK sample, but not in the Dutch. Differentiating Emotions and Verbal Sharing contributed to the prediction of

Table 5
Multiple regression analyses with SCL, CDI and Worry as the dependent variables

	UK ($n = 393$)			Dutch ($n = 299$)
	SCL	CDI	Worry	SCL
Adjusted R squared	.21	.24	.29	.18
Standardized Beta coefficients				
Differentiating Emotions	−.35**	−.33**	−.32**	−.34**
Verbal Sharing of Emotions	.03	−.15**	−.14**	−.02
Bodily Awareness	.19**	.09	.20**	.17**
Acting Out Emotions	.01	.08	.07	.02
Analyses of Emotions	−.19**	−.28**	−.06	−.04
Others' Emotions	.10*	.09	.22**	.10

* $p < .05$.
** $p < .01$.

the CDI and Worry. Additionally, Analyses of Emotions contributed to the prediction of the CDI, whereas Bodily Symptoms and Others' Emotions contributed to the prediction of Worry.

4. Discussion

The outcomes of the exploratory factor analyses suggest that six distinct features of emotion awareness can be identified and measured by a self-report questionnaire in childhood. However, only five scales (Differentiating Emotions; Verbal Sharing of Emotions; Bodily Awareness; Analyses of Emotions; Others' Emotions) showed good psychometric properties after one or more items were omitted from the scales. The scale Others' Emotions remained fully intact. However, the psychometric properties of one scale (Acting Out Emotions) were poor, even after omitting items. Ten items were excluded in total, which left the EAQ consisting of 30 items. Second, the predictive validity of the Emotion Awareness Questionnaire was good with respect to self-reported somatic complaints (in samples from two different countries, the UK and the Netherlands), depression and worry. However, caution should be taken, because not all scales contributed to these predictions and Bodily Awareness and Others' Emotions did so in the unexpected direction.

In line with the alexithymia questionnaire for children (Rieffe et al., 2006), the scale Differentiating Emotions, which is partly based on the original factor Difficulty Identifying Feelings, contributed the most to the prediction of somatic complaints, even after excluding the items of the original scale that directly referred to physical features. As was evident in the former study (Rieffe et al., 2006), the Verbal Sharing of Emotions did not make a significant contribution to the prediction of somatic complaints. Acting Out Emotions did not contribute to the prediction of any of the internalising variables, which could be explained by the fact that the scale has been reduced to only three items that had a low internal consistency.

Despite a fairly high inter-correlation with Differentiating Emotions, Bodily Awareness still made a significant unique contribution to the prediction of somatic complaints, but in the opposite direction to that expected. It was predicted that a better understanding of the fact that emotions consist of a subjective feeling state and physiological arousal would be related to increased mental and physical health. However, the opposite pattern appeared: children with many somatic complaints were more attentive to the bodily symptoms of emotions. One reason for this finding could be that children with many somatic complaints tend to have more intense (negative) emotions (Meerum Terwogt, Rieffe, Miers, Jellesma, & Tolland, 2006; Rieffe et al., 2004). Stronger emotions are accompanied by more salient bodily signals, which improve the chances of establishing a direct link between these two phenomena. This implies that there is not much wrong with the preverbal coding of feelings (Bucci, 1997) in children who report more somatic complaints. Their main problems seem to appear later in verbally identifying what they feel. It could even be argued that this focus on the bodily aspects might prevent them from making a careful analysis of the emotion-evoking situation, which would diminish their chances to deal with that situation adaptively. Moreover, once the emotion-evoking situation is dealt with appropriately, the emotion will vanish: the subjective feeling state as well as the bodily signals. In other words, children who immediately try to find an adequate coping response do not need to pay much attention to the physical effects.

The willingness to face emotions (Analyses of Emotions) and attention to the emotions of others (Others' Emotions) contributed significantly to the prediction of somatic complaints, but only

in the UK sample. The fact that the mean age of the Dutch sample was two years younger might explain this difference. Plausibly, understanding the informative value of emotions increases rapidly in early adolescence. We are currently carrying out a longitudinal study to further investigate how cognitive development affects the different aspects of emotional awareness in children and adolescents and how this is related to their health. However, the outcome that increased attention to other people's emotions predicted more somatic complaints instead of less was unexpected. The same outcome appeared with respect to the prediction of worry. Whereas the other scales reflect reported *capacities,* the scale Others' Emotions reflects how much one values the ability to understand other people's feelings. It is possible that the items of this scale are more prone to evoke socially desirable responses. However, to value something does not necessarily coincide with one's capability to do so. Further investigation is required here to clarify these outcomes.

In conclusion, some subscales of the EAQ require more items or a closer investigation of how the concept is related to the criterion variables. Other scales, however, show good psychometric properties and predictive value. The EAQ broadens the alexithymia concept and gives an indication of children's ideas about their emotional functioning in various areas, which appear to be relevant to overall mental health. Furthermore, it opens the possibility to examine which specific elements of emotional (dys)functioning are related to different kinds of psychological problems, which could give us a better understanding of the nature of these problems. For example, the outcomes of this study seem to suggest that talking about emotions is especially important for children and adolescents who show symptoms of depression and the closely related maladaptive coping strategy, worrying, whereas this feature seems to be less related to somatic complaints. Note, however, that a causal relationship between emotion awareness and the criterion variables cannot be examined based on the results of this cross-sectional study. With the use of more objective measures than those found in the present study, such as teacher or parent reports, and with longitudinal data, we hope to corroborate and shed more light on these findings.

References

Bagby, R. M., Parker, J. D. A., & Taylor, G. J. (1994). The twenty-item Toronto Alexithymia Scale: Part I, Item selection and cross-validation of the factor structure. *Journal of Psychosomatic Research, 38*, 23–32.

Bonnano, G. A., & Singer, J. L. (1990). Repressive personality style: Theoretical and methodological implications for health and pathology. In J. L. Singer (Ed.), *Repression and dissociation: Implications for personality theory, psychopathology and health* (pp. 435–470). Chicago: University of Chicago Press.

Bruch, H. (1973). *Eating disorders: Obesity, anorexia nervosa, and the person within*. New York: Basic Books.

Bucci, W. (1997). Symptoms and symbols: A multiple code theory of somatization. *Psychoanalytic Inquiry, 17*, 151–172.

Frijda, N. (1986). *The Emotions*. Cambridge: Cambridge University Press.

Hemphill, J. (2003). Interpreting the magnitude of correlation coefficients. *American Psychologist, 58*, 78–79.

Hill, E., Berthoz, S., & Frith, U. (2004). Cognitive processing of own emotions in individuals with autistic spectrum disorder. *Journal of Autism and Developmental Disorders, 34*, 229–235.

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.

Kooiman, C. G., Spinhoven, P., & Trijsburg, R. W. (2002). The assessment of alexithymia. A critical review of the literature and a psychometric study of the Toronto Alexithymia Scale-20. *Journal of Psychosomatic Research, 53*, 1083–1090.

Kovacs, M. (1992). *Children's depression inventory manual*. Los Angeles: Western Psychological Services.

Kristal, H., & Raskin, H. (1970). *Drug dependence*. Detroit: Wayne State University Press.
Krystal, H. (1968). *Massive psychic trauma*. New York: International Universities Press.
Levenson, R. W. (1999). The intrapersonal functions of emotion. *Cognition and Emotion, 13*, 481–504.
Meerum Terwogt, M., Rieffe, C., Miers, A. C., Jellesma, F. C., & Tolland, A. (2006). Emotions and self-esteem as indicators of somatic complaints in children. *Infant and Child Development, 15*, 581–592.
Nemiah, J. C. (1984). The psychodynamic view of anxiety. In R. O. Pasnau (Ed.), *Diagnosis and treatment of anxiety disorders* (pp. 117–137). Washinton, DC: American Psychiatric Press.
Pennebaker, J. W. (1984). Accuracy of physical symptoms. In A. Baum, S. E. Taylor, & J. E. Singer (Eds.). *Handbook of Psychology and Health* (4, pp. 189–217). Hillsdale, NJ: Erlbaum.
Rieffe, C., Meerum Terwogt, M., & Jellesma, F. C. (in press). Emotional competence and health in children. In: Denollet, J., Nyklicek, I., & Vingerhoets, A. (Eds.). *Emotion regulation: Conceptual and clinical issues*. New York: Springer.
Rieffe, C., Meerum Terwogt, M., & Bosch, J. D. (2004). Emotional awareness and somatic complaints in children. *European Journal of Developmental Psychology, 1*, 31–47.
Rieffe, C., Oosterveld, P., & Meerum Terwogt, M. (2006). An alexithymia questionnaire for children: Factorial and concurrent validation results. *Personality and Individual Differences, 40*, 123–133.
Scherer, K. R. (2000). Emotion. In M. Hewstone & W. Stroebe (Eds.), *Introduction to social psychology: A European perspective* (third ed., pp. 151–191). Oxford: Blackwell.
Sifneos, P. E. (1973). The prevalence of alexithymic characteristics in psychosomatic patients. *Psychotherapy and Psychosomatics, 22*, 255–262.
Suveg, C., & Zeman, J. (2004). Emotion regulation in children with anxiety disorders. *Journal of Clinical Child and Adolescent Psychology, 33*, 750–759.