Alexithymia, Internalizing, Externalizing and Obsessive-Compulsive Symptomatology in Pre-adolescence: An Empirical Study on 160 Subjects

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Although alexithymia is considered a risk factor for the development of pathology, empirical studies on the relationship between dys-regulation of emotions and problems in childhood are relatively lacking. The aim of the study is to evaluate the relationship between alexithymia, internalizing/externalizing and obsessive-compulsive symptoms in pre-adolescents. The Italian version of the Alexithymia Questionnaire for Children, the Youth Self Report and the Leyton Obsessional Inventory-Child Version were administered to 160 pre-adolescents (11-12 years = 80; 13-14 years = 80; boys = 80, girls = 80). Results showed that subjects with high alexithymia levels had higher scores in the internalizing, externalizing and in the obsessive-compulsive symptomatology scales. Moreover, significant correlations between the alexithymia level and the symptoms scales were found in the whole sample and in gender and age subgroups. Hierarchical Multiple Regression analysis showed that the Difficulty Identifying Feelings Factor is the only significant predictor of all the internalizing, externalizing and obsessive-compulsive symptomatology scales. Data contribute toward confirmation of the relationship between facets of alexithymia and the development of pathology during childhood.
Key words: *alexithymia*, *internalizing, externalizing and obsessive-compulsive symptoms*, *pre-adolescence*.

1
Introduction

The construct of alexithymia (from the Greek: a lack of words for emotions) includes a difficulty in identifying and communicating one's own emotions, a cognitive style oriented toward practical and objective aspects of experience (externally oriented thinking) and constrained imaginative processes (Taylor, Bagby, Ryan, Parker, 1990). This concept departs from a notion of inhibition and is closer to that of a deficit: the alexithymic person has difficulty in being in contact with and/or expressing his/her own emotional experience, and the

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cognitive/verbal component of emotion is consequently inadequate (Taylor, Bagby, Parker, 1997). Even though the term arises in the psychosomatic domain, alexithymia is currently considered a general risk factor for all somatic and mental pathology, on the basis of the assumption that a difficulty in relating to oneself can cause various effects according to its interaction with other factors (Taylor, 1987; Solano, 2001).

Although in the area of developmental psychopathology the importance for psychic development of acquiring the capacity to think about, to express, and to modulate emotions is generally recognized, not many studies on alexithymia are available. Although underlying impairments in emotional development may in fact be hypothesized in almost all specific psychopathological syndromes of childhood, in *DSM-IV* emotional difficulty is considered just like other symptoms or behaviors in the clinical picture (Solano, 2006) and not as a main clinical core for pathology.

Research studies on alexithymia in groups of children and adolescents are quite few, owing also to the paucity of assessment instruments for alexithymia during the developmental period. Some specific scales for children between 8 and 14 years of age have been validated (Fukunishi, Yoshida, Wogan, 1998; Rieffe, Oosterveld, Terwogy, 2006; Di Trani, Presaghi, Solano, 2010), whereas for adolescents, questionnaires originally used for adult populations have often been adapted and validated (La Ferlita *et al.*, 2007; Sakkinen *et al.*, 2007; Zimmermann *et al.*, 2007; Nishimura *et al.*, 2009).

Relationships between alexithymia and somatic complaints in children and adolescents were found in some studies (Ebeling, Moilane, Linna, Räsänen, 2001; Rieffe, Terwogt, Bosch, 2004; Rieffe, Oosterveld, Terwogt, 2006; Rieffe *et al.*, 2010), while others showed high levels of alexithymia in developmental-age subjects with somatic pathologies (hematological disturbances: Fukunishi, Tsuruta, Hirabayashi, Asukai, 2001; diabetes: Koski, Holmberg, Torvinen, 1988). As far as psychiatric pathology is concerned, higher alexithymia scores have been observed in groups of adolescents with a diagnosis of anorexia nervosa (Zonnevylle-Bender *et al.*, 2004) and of chronic fatigue syndrome (van de Putte *et al.*, 2007), compared to healthy control groups. Furthermore, in a group of adolescents with sexual behavior problems, scanty attention to one's own emotions was noted (but not higher levels of alexithymia), always compared to a control group without behavioral problems (Moriarty *et al.*, 2001). On the other hand, studies on non-clinical samples showed a relationship between alexithymia and dissociative symptoms in a group of adolescent subjects (Sayar, Kose, 2003; Sayar, Kose, Grabe, Topbas, 2005) and a reduced capacity to ask for help in a group of adolescents with high levels of alexithymia (Ciarrochi, Deane, Wilson, Rickwood, 2002).

Studies on the relationship between alexithymia and internalizing/externalizing symptomatology (Honkalampi *et al.*, 2009; Rieffe *et al.*, 2010; Karukivi *et*

al., 2010), carried out on samples of children and adolescents taken from the general population, are also present in the literature. Internalizing symptoms include the tendency towards behavioral inhibition, the presence of negative-type feelings (anxiety and depression), and the presence of somatic symptoms. Externalizing symptoms include aggression, oppositional behavior and hyperactivity. Rieffe *et al.* (2010) demonstrated a direct relationship between alexithymia and the expression of internalizing symptoms in a sample of children and pre-adolescents, Honkalampi *et al.* (2009) found a relationship between alexithymia, depressive feelings, and internalizing and externalizing symptoms in a non-clinical sample of 3.936 adolescents and Karukivi *et al.* (2010) found that alexithymic adolescents had significantly higher anxiety scores than the non-alexithymic adolescents. Moreover, Manninen *et al.* (2011) examined the associations between alexithymia and psychiatric symptoms among adolescents living in a closed institution because of severe behavioral problems: reform school adolescents were significantly more alexithymic than the control group, and alexithymia levels were correlated with numerous psychiatric problems, mainly in the internalizing spectrum, but also with thought problems and self-reported aggression.

Finally, the relationship between alexithymia and obsessive-compulsive symptoms, which are not included in internalizing and externalizing symptomatology, was rarely investigated in childhood. In fact, only one paper by Allen, Abbott, Rapee, Coltheart (2006) found no significant difference in the capacity to recognize emotions between a group of children with Obsessive-Compulsive Disorder (OCD), and a non-clinical group. On the other hand, some studies on adult populations point to a relationship between alexithymia and OCD (Bankier, Aigner, Bach, 2001; Grabe *et al.*, 2006; Rufer *et al.*, 2006; Dasgupta, Sanyal, 2007; De Berardis *et al.*, 2005; De Berardis *et al.*, 2008; Carpenter, Chung, 2011), so it might be interesting to better evaluate this relationship in children.

On the basis of the literature, the aim of this paper is to assess the relationship of the different facets of alexithymia with psychological problems during childhood/preadolescence. In particular, we chose to consider the relationship with the presence of symptoms of the internalizing/externalizing clusters, and of the obsessive-compulsive spectrum in pre-adolescent subjects (between the ages of 11 and 14 years) from the general population. We hypothesized that alexithymia could be in relationship with both internalizing, externalizing and obsessive-compulsive symptomatology, because it represent a vulnerability factor that, in interaction with other variables, can contribute to the development of various forms of problems. Moreover, in order to verify the specific role of developmental aspects, the influence of age and gender on the relationship between alexithymia and symptoms was considered. In fact, gender and age differences in alexithymia have been reported in adults by some authors (gender differences: Parker *et al.*, 2003, Levant *et al.*, 2009; age differences: Mattila *et al.*, 2006; Mo-

riguchi *et al.*, 2007), but they were seldom investigated in childhood (Di Trani *et al.*, 2009; Karukivi *et al.*, 2010).

2
Method

2.1. Participants

The sample consists of 160 subjects between the ages of 11 and 14 years (m = 12.50; SD = 1.12; range 11-12 years N = 80; range 13-14 years N = 80), 80 males (age m = 12.50, SD = 1.12) and 80 girls (age m = 12.50, SD = 1.12). All the subjects attend middle school and are either Italians or foreign children who have attended an Italian school for at least three years (16.25% of the group, 26 children). We considered that the 3 years period of schooling could be sufficient for enabling adequate comprehension of the tests.

2.2. Measures

The assessment includes the following instruments:
– *Alexithymia Questionnaire for Children* (AQC; Rieffe, Oosterveld, Terwogy, 2006) in the Italian version by Di Trani *et al.* (2009).

This questionnaire, originally created by Rieffe, Oosterveld, Terwogy (*ibid.*), is actually a simplified version of the 20-Item Toronto Alexithymia Scale (TAS-20; Bagby, Parker, Taylor, 1994), the self-administered instrument more frequently used for the assessment of alexithymia in adulthood. Items of the scale for adults are preserved as to number, structure and contents, but are linguistically adjusted to facilitate their comprehension by children, and are scored on a three-point (instead of a five-point) scale. In Italy, it was validated on a population of 1.265 children aged 8 to 14 years (Di Trani *et al.*, 2009; Di Trani, Presaghi, Solano, 2010). An Exploratory Factor Analysis (EFA) demonstrated a four-factor structure (Difficulty Identifying Feelings, Difficulty Describing Feelings, Confusion about Physical Sensations, and Externally Oriented Thinking), while a further Confirmatory Analysis indicated greater stability of a three-factor structure (Difficulty Identifying Feelings, Difficulty Describing Feelings, and Externally Oriented Thinking; Di Trani, Presaghi, Solano, 2010). This pattern reconfirmed the structure of the TAS-20 for adults and that proposed by Rieffe, Oosterveld, Terwogy (2006), in the original version of the AQC. Single factor scores, as well as a total score, may be obtained, the latter being directly proportional to the degree of alexithymia; the higher the score obtained, the greater the degree of alexithymia. To our knowledge, no study so far computed cut-off scores aimed at identifying "alexithymic" and "non alexithymic" subjects. With reference to reliability, the Italian version of the questionnaire showed acceptable internal consistency (total

score Cronbach's Alpha = 0.66; total score Spearman test-retest = 0.91). Significant correlations between the total score and factor scores were also found.

– *Leyton Obsessional Inventory - Child Version* (LOI-CV survey-form; Berg *et al.*, 1988).

This is a 20 item self-administered questionnaire, which provides two partial scores: the "Symptoms Scale" and the "Interference Scale"; the first of these evaluates the presence or absence of obsessive-compulsive symptoms, and the other, their degree of intrusion or interference in the subject's daily activities. From the sum of the scores on the two sub-scales, a total score of the impact of OCD symptomatology is obtained. The psychometric characteristics of the scale appear good (Berg *et al.*, 1988). Specifically, the test-retest Pearson correlation coefficients, evaluated for 3 age groups, are adequate: 0.51 (8-10 yr old), 0.75 (11-13 yr), 0.83 (14-16 yr), suggesting the temporal stability of the instrument (King, Inglis, Jenkins, Myerson, 1995). The LOI-CV proved to be a sensitive and precise instrument for the preclinical screening of OCD in childhood, both in USA (Flament *et al.*, 1988; King, Inglis, Jenkins, Myerson, 1995; Stewart, Ceranoglu, O'hanlet, Geller, 2005) and in many European countries (Bamber *et al.*, 2002; Roussos *et al.*, 2003; Brynska, Wolanczyk, 2005), including Italy (Maggini *et al.*, 2001).

– The *Youth Self Report* (YRS 11/18; Achenbach, 1991).

The *Youth Self Report* (YRS) provides self-ratings for 112 problem items paralleling those of the Child Behavior Checklist CBCL/6-18. The YRS also includes open-ended responses to items covering physical problems, concerns, and strengths. Youths assess themselves on how true each item is now or was within the past six months, using the same three-point response scale as the CBCL/6-18 and Teacher Report Form (TRF). The YRS is recommended only with children 11 years and older and allows an investigation of the degree of self-awareness around the development of social abilities and the possible presence of psychological and behavioral problems. The YRS, like the CBCL and the TRF, yields scores on eight empirically derived syndrome scales: anxious/depressed; withdrawn/depressed; somatic complaints; social problems; thought problems; attention problems; rule-breaking behaviour; aggressive behaviour. These scales are grouped into two higher order factors: Internalizing Symptomatology Scale (the sum of the first three sub-scales) and the Externalizing Symptomatology Scale (the sum of the last two sub-scales). The instrument showed good psychometric characteristics (range of test-retest value, 0.47 to 0.79; range of internal consistency, 0.71 to 0.95), and it has been utilized in studies of very large populations both in USA (Achenbach, 1991; Ivanova, Achenbach, 2007; Rescorla, 2007) and in Italy (Frigerio *et al.*, 2009).

2.3. Procedure

The administration of the questionnaires was carried out in the classroom during the academic schedule, after having contacted the schools directors and obtained

informed consent from parents for their administration. There was no refusal either from parents or children. All the subjects were asked to complete – in the presence of a clinical psychologist, after a group explanation – a self-administered, anonymous testing. The psychologist remained in the classroom for the entire duration of the tests, at disposal for further clarifications.

2.4. Statistical Analysis

Considering the absence of cut-off scores to identify alexithymic and non-alexithymic subjects, the sample was subdivided into two groups with High and Low Alexithymia on the basis of the total score obtained on the AQC and its placement above or below the sample's median. Subsequently, to better analyse the relationship between alexithymia and different symptoms, Analyses of Variance (ANOVA) were conducted between the groups with High and Low Alexithymia with respect to the scores on the Scales of Externalizing and Internalizing Symptomatology of the YRS and to the total scores of the LOI-CV scale.

Moreover, differences between gender and age groups on alexithymia levels, internalizing, externalizing and obsessive/compulsive symptoms were also evaluated by using ANOVASs.

In addition, correlations (Pearson's r) between the AQC scores (total and factor scores), the LOI-CV total score and the YRS internalizing and externalizing symptomatology scores were performed in the total sample and, separately, in gender and age groups.

Finally, Hierarchical Multiple Regression Equations were computed in order to reveal predictive relationships between individual characteristics (age and gender), different facets of alexithymia and the presence of symptoms in a more stringent way. Specifically, in different sets of analysis, the internalizing score of the YRS, the externalizing score of the YRS and the total score of the LOI-CV were considered as dependent variables, while age, gender and the three factor scores of the AQC were included as predictors in all the analyses.

3
Results

3.1. ANOVAs between High and Low Alexithymia groups

In order to divide the sample into two groups with High and Low Alexithymia, it was decided to consider as a criterion the placement of the total score obtained by each child on the AQC, above or below the median of the entire sample that corresponds to 28.00 (very similar to the mean of the sample, 28.12). Thus two groups were created: High Alexithymia (total score > 28.00; n = 80) and Low Alexithymia (total score < 28.00; n = 80).

ANOVAs were then carried out between the groups with High and Low Alexithymia on the scores obtained on the YRS scores of Externalizing and Internalizing Symptomatology. In the High Alexithymia group, the results showed higher scores relative to the presence of symptomatology of both the externalizing type ($F = 7.50$, $p = 0.01$) and the internalizing type ($F = 33.09$, $p = 0.00$), compared to the Low Alexithymia group. Furthermore, analyses showed a higher score on obsessive-compulsive symptoms in the group with High Alexithymia, with respect to that with Low Alexithymia ($F = 6.70$, $p = 0.01$) (cfr. TAB. 1).

TABLE 1

ANOVAs between High and Low Alexithymia Groups and different symptomatology scales

	YSR Externalizing Score		YSR Internalizing Score		LOI-CV Total Score	
	m	SD	m	SD	m	SD
High Alexithymia	15.73	7.73	35.33	12.49	35.33	12.49
Low Alexithymia	12.41	7.56	30.69	10.04	30.69	10.04
	$F = 7.50$; $p = 0.01$		$F = 33.09$; $p = 0.00$		$F = 6.70$; $p = 0.01$	

3.2. ANOVAs between age and gender groups

No differences were found between gender groups on the AQC total score, the LOI-CV total score and the YSR internalizing/externalizing scores. Regarding age groups, children between 13 and 14 years old showed more externalizing symptoms than children between 11 and 12 years old (cfr. TAB. 2).

TABLE 2

Differences between age and gender groups on alexithymia levels, internalizing, externalizing and obsessive/compulsive symptoms

	11-12 years old		13-14 years old				Boys		Girls			
	m	SD	m	SD	F	p	m	SD	m	SD	F	p
AQC total score	28.47	5.22	28.32	6.13	0.03	N.S.	29.15	5.42	27.65	5.86	2.82	N.S.
YSR Internalizing score	17.41	9.70	16.66	9.01	0.26	N.S.	16.74	10.00	17.34	8.68	0.16	N.S.
YSR Externalizing score	12.51	6.90	15.63	8.37	6.59	0.01	14.50	8.19	13.64	7.42	0.49	N.S.
LOI-CV total score	32.26	11.30	33.75	11.78	0.66	N.S.	32.15	11.63	33.86	11.44	0.88	N.S.

3.3. Correlations

Significant correlations were found between the total alexithymia score of and the scores related to internalizing, externalizing and obsessive-compulsive symptomatology in the whole sample and in both age and gender groups. Similarly, significant correlations were found between Difficulty Identifying Feelings scores and the scores related to internalizing, externalizing and obsessive-compulsive symptomatology in the whole sample and in both age and gender groups.

Moreover, Difficulty in Describing Feelings scores were significantly correlated to internalizing symptomatology in the total sample and in subgroups, while Externally Oriented Thinking scores were significantly correlated with the different forms of symptomatology but correlations were all $r < 0.27$.

In TAB. 3 correlations in the whole sample and in the gender and age groups were reported.

TABLE 3
Correlations between alexithymia and symptomatological scales in the total sample and in gender and age groups

	Total sample		
	YSR Internalizing score	YSR Externalizing score	LOI-CV total score
AQC total score	0.55**	0.33**	0.38**
dif	0.57**	0.39**	0.46**
ddf	0.42**	0.12	0.17*
eot	0.17*	0.16*	0.12
	Boys		
	YSR Internalizing score	YSR Externalizing score	LOI-CV total score
AQC total score	0.60**	0.39**	0.47**
dif	0.65**	0.48**	0.59**
ddf	0.44**	0.15*	0.22
eot	0.11	0.13	0.07
	Girls		
	YSR Internalizing score	YSR Externalizing score	LOI-CV total score
AQC total score	0.53**	0.26*	0.33**
dif	0.48**	0.31*	0.34**
ddf	0.40**	0.07	0.13
eot	0.27*	0.17	0.23*

TABLE 3 (*continued*)

	11-12 years old		
	YSR Internalizing score	YSR Externalizing score	LOI-CV total score
AQC total score	0.48**	0.29**	0.37**
dif	0.50**	0.37**	0.39**
ddf	0.37**	0.05	0.20
eot	0.21	0.18	0.23*
	13-14 yaers old		
	YSR Internalizing score	YSR Externalizing score	LOI-CV total score
AQC total score	0.63**	0.41**	0.40**
dif	0.64**	0.41**	0.54**
ddf	0.47**	0.18	0.13
eot	0.12	0.23*	0.04

DIF = Difficulty Identifying Feelings; DDF = Difficulty Describing Feelings; EOT = Externally Oriented Thinking.
* $p < 0.05$.
** $p < 0.01$.

3.4. Hierarchical Multiple Regression Analysis

Correlations between predictors of Hierarchical Multiple Regression Analysis were computed in the total sample: a significant correlation was found between Difficulty in Identifying Feelings and Difficulty in Describing Feelings AQC factors ($r = 0.59$; $p = 0.00$).

Hierarchical Multiple Regression Analysis in the total sample showed that Difficulty in Identifying Feelings scores were the only significant predictor of the internalizing, and obsessive/compulsive symptomatology scales, while the inclusion of other variables did not increase the variance explained. Age and Difficulty in Identifying Feelings emerged as significant predictors of externalizing symptomatology (cfr. TAB. 4).

TABLE 4
Hierarchical Multiple Regression Analysis in the total sample

	YSR Internalizing score			
	R^2 Change	B	Beta	p
Age	0.00	-0.19	-0.34	0.73
Gender	0.00	-1.18	-0.92	0.36

TABLE 4 (*continued*)

YSR Internalizing score

	R^2 Change	B	Beta	p
dif	0.32	1.32	5.83	0.00
ddf	0.01	0.57	1.59	0.11
eot	0.00	0.35	1.06	0.29

YSR Externalizing score

	R^2 Change	B	Beta	p
Age	0.05	1.70	3.44	0.00
Gender	0.00	0.59	0.52	0.61
dif	0.15	1.14	5.62	0.00
ddf	0.03	-0.76	-2.38	0.07
eot	0.02	0.51	1.75	0.08

LOI-CV total score

	R^2 Change	B	Beta	p
Age	0.00	0.20	0.27	0.79
Gender	0.01	-1.86	-1.10	0.27
dif	0.21	1.84	6.16	0.00
ddf	0.01	-0.85	-1.78	0.08
eot	0.01	0.45	1.03	0.30

DIF = Difficulty Identifying Feelings; DDF = Difficulty Describing Feelings; EOT = Externally Oriented Thinking.

4
Discussion

In agreement with literature (Rieffe *et al.*, 2010; Honkalampi *et al.*, 2009), the results of our study show a relationship between the presence of alexithymic characteristics and the manifestation of various forms of distress within the sample of pre-adolescent subjects considered.

Subjects with high alexithymia levels showed higher scores on the internalizing (withdrawal, anxiety states and depression), externalizing (aggressive and delinquent behavior) and obsessive-compulsive scales. Total AQC scores were significantly correlated with all the symptomatology scales. Correlations with internalizing symptoms in the whole sample, and in gender and age subgroups, appeared stronger than correlations with externalizing symptoms. These data, according to literature, seem to underline the relationship between alexithymia

and mood disorders, such as depression and anxiety, in children (Honkalampi *et al.*, 2009; Rieffe *et al.*, 2010; Karukivi *et al.*, 2010). As previously pointed out by Honkalampi *et al.* (2009) and Manninen *et al.* (2011) our work instead confirmed that alexithymia could be in relationship also with externalizing symptoms.

With reference to adulthood, many studies indicate that alexithymia may have a relationship with the manifestation of various forms of distress, both physical (for example, hypertension: Grabe *et al.*, 2010; diabetes: Chatzi *et al.*, 2009; asthma: Li, Sun, Zhuang, Yang, 2008) and mental (for example, psychotic disorders: van't Wout, Aleman, Bermond, Kahn, 2007; panic attack disorder: Galderisi *et al.*, 2008; eating disorders: Karukivi *et al.*, 2010; sexual disorders: Madioni, Mammana, 2001), to the extent that alexithymic characteristics can be considered a general risk factor for the development of pathology. Such a relationship was not yet confirmed for childhood, due to the paucity of existing research studies and the difficulty in creating self-report measuring instruments for children. At any rate, we can assume that, in childhood as in adulthood, alexithymia can represent a vulnerability factor that, in interaction with other variables (individual, relational, and environmental), can contribute to the development of various forms of problems.

Moreover, the presence of a disturbance in affect regulation does not necessarily imply an observation of low levels of manifest emotion, but high alexithymia scores may be seen in subjects characterized by excessive levels of expressed emotion and by modalities of chaotic expression (Solano, 2001, p. 214). In fact we may note that pre-adolescents may characteristically demonstrate an emotional oscillation that can involve the expression of symptoms now of the internalizing type, now of the externalizing type (Levi, Meledandri, Romani, Terrinoni, 2007). The emotions that the developmental phase itself entails, with frequent emotional oscillations and confusion about changes in one's own internal world, require abilities of self-regulation that do not always appear effective and that can involve the expression of various problematic states and behaviors. It is possible that in this particular developmental phase, that of pre-adolescence, in which balances are upset by the biological and psychological changes of puberty, the capacities to identify and describe emotions can fulfill an especially important role in overcoming the developmental crisis and supporting the recovery of a new psychic equilibrium. Otherwise, emotions that are not elaborated and regulated can find expression through acting out (externalizing symptoms) or, alternatively (in our sample, somewhat more often), through the creation of worries, somatic symptoms, ill-defined emotional states, and tendencies toward melancholy (internalizing symptoms).

Regarding gender and age subgroups, correlations between alexithymia and internalizing/externalizing symptoms appear stronger in boys and in children aged 13-14 for both YSR scales. Moreover, Regression Analysis showed that age, but not gender, was a significant predictor of externalizing symptoms. On one

hand, these data in children could be related to literature showing that alexithymia is associated with the male gender (Parker *et al.*, 1989; 2003; Lane *et al.*, 1998; Mattila *et al.*, 2006) and increasing age in adults (Pasini *et al.*, 1992; Mattila *et al.*, 2006). On the other hand, the expression of externalizing symptoms seems to be in relationship with age, which is coherent with aggression and acting out being a feature of adolescence. The influence of gender and age on alexithymia levels and onthe relationship between alexithymia and symptoms appers to be unclear for both adults and children, and further research seem to be necessary to better understand these aspects.

With reference to AQC factors, correlations in the total sample and in both genders and age groups appear higher for DIF than for the other two factors. Regression results show that most of the explained variance, both for internalizing and externalizing scales, is due to DIF scores. Difficulties in Identifying Feelings seems to be the specific feature of alexithymia that is in relationship with the symptoms expression.

With reference to obsessive-compulsive traits, our data show a significant correlation between AQC total score and LOI-CV total score. This result appears to be consistent with the existing literature on adult groups (Grabe *et al.*, 2006; Dasgupta, Sanyal, 2007). Various authors emphasize that one of the underlying key points of obsessive organization is anxiety towards change and what is unpredictable. Consequently an intense control arises over the emotions, which are not accepted as a natural feeling but are, in general, covered by extended rationalizations in an attempt to make them look logical. Thus the obsessive structure would be based on a defensive control of emotions, characterized in adolescence by anxiety towards transformations involved in this period of life. In this connection, Grotstein (1997) proposes a theory on alexithymia genesis that integrates deficit and defensive aspects; he hypothesizes that a failure in primary relationships (lack of containment, attunement) would cause emotion to remain in a primitive state of indifferentiation. The danger of being flooded by such primitive affectivity would involve the organization of general, massive defenses in the face of emotions, with a consequent development of symptoms. In this framework obsessive-compulsive traits may be viewed as the expression of an attempt to contain and control those affects that are not identifiable and definable, which are consequently difficult to elaborate through thoughts and words.

With reference to specific AQC factors, Difficulty Identifying Feelings also emerges as the only significant predictor of the presence of obsessive-compulsive traits. The results appear to contradict the data presented in the literature that report a specific relationship (in a group of adult subjects with OCD) of EOT with obsessive-compulsive symptomatology (Bankier, Aigner, Bach, 2001; Rufer *et al.*, 2006; De Berardis *et al.*, 2008). It is important to underline that these studies were carried out on clinical groups with the diagnosis of OCD, in which the characteristic modalities of obsessive and ruminative thinking were by then stable

and chronic and were also expressed through a communicative modality often centered on obsessive themes, with little emotion; our study, quite differently, was conducted with a preadolescent group taken from the general population, whereas the presence of obsessive-compulsive traits appears vague and not clinically significant, and will not necessarily involve the development of OCD in adulthood.

In conclusion, the results of our research tend to confirm the existence of a relationship between alexithymia and the presence of internalizing and externalizing symptomatology, and specifically, of obsessive symptomatology, in a preadolescent population. As in adults, a difficulty in making contact with one's own internal world can find expression through behavioral alterations, through somatic symptom formation, or through the creation of psychological symptoms of various types. A good capacity for affect regulation, then, appears to be an important protective factor in going through the developmental changes linked to the beginning of adolescence.

One limitation of this study is the small sample size. The power to detect less robust associations would be enhanced by a larger sample, which might in turn allow the detection of further differences linked to gender and age. The cross-sectional design of this study is another limitation towards any definite inference regarding the direction of the association found.

Further longitudinal studies are needed in order to better understand the contribution of alexithymic characteristics to symptomatic problems in childhood and pre-adolescence, and to allow an understanding of the development of the presence of alexithymic characteristics and of psychological symptoms over time.

Confirmation of these results would suggest that more attention needs to be paid to emotion awareness in children with psychological disorders. In this regard, a validated questionnaire on alexithymia would serve as a useful clinical tool in clinical children populations and a high score on an alexithymia scale could suggest an intervention aimed at increasing emotional skills in children with internalizing/externalizing and obsessive-compulsive symptoms.

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Riassunto

Nonostante l'alessitimia sia considerata un fattore di rischio per lo sviluppo della patologia, gli studi empirici sulla relazione tra dis-regolazione emotiva e disagio in età evolutiva sono relativamente scarsi. Lo scopo dello studio è quello di valutare la relazione tra alessitimia e sintomi di tipo internalizzante, esternalizzante e ossessivo-compulsivi in pre-adolescenza. La versione italiana del Questionario per l'alessitimia in età evolutiva, lo Youth Self Report e la Leyton Obsessional Inventory-Child Version sono stati somministrati a 160 pre-adolescenti (11-12 anni = 80; 13-14 anni = 80; maschi = 80, femmine = 80). I risultati hanno mostrato che i soggetti con alta alessitimia hanno ottenuto punteggi più alti alle scale dei sintomi internalizzanti, esternalizzanti ed ossessivo-compulsivi. Sono emerse inoltre correlazioni significative tra il livello di alessitimia e le scale dei sintomi sia nel campione totale, che nei sottogruppi relativi al genere e alle fasce di età. Le Regressioni multiple gerarchiche hanno mostrato che il Fattore difficoltà a identificare le emozioni è l'unico predittore significativo di tutte le scale di sintomatologia internalizzante, esternalizzante ed ossessivo-compulsiva. I dati contribuiscono a confermare la relazione tra aspetti dell'alessitimia e sviluppo della patologia in l'età evolutiva.

Parole chiave: *alessitimia*, *sintomi internalizzanti, esternalizzanti e ossessivo-compulsivi*, *pre-adolescenza*.

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