



Full Length Research Paper

Alexithymia in headache sufferers: A psychosomatic symptom or comorbidity in adolescents?

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Abstract

This paper examines the relationship between Alexithymia and Primary Headaches in children and adolescents. The present work represents an observational research. The aim of this study is to clarify whether there is: (a) a significant correlation between primary headache and alexithymia in patients in developmental age; and (b) a significant difference in prevalence of alexithymia between patients with migraine and patients with tension-type headache. This study was carried out on a clinical group of 35 subjects, 11 males and 24 females, and a control group of 35 subjects, 12 males and 23 females. Primary headache was diagnosed by applying the International Headache Classification (ICHD-II, 2004) criteria while the alexithymic construct were measured using the Italian version of Toronto Alexithymia Scale. Higher rates of alexithymia were observed in the children of the clinical group rather than in the control group; in particular we didn't found any significant correlation between alexithymia rates and migraine/tension-type headache diagnosis.

Keywords: Headache, Childhood, Adolescence, Alexithymia, Psychopathology.

INTRODUCTION

Alexithymia means "lack of words for emotions". The presence of alexithymic traits nowadays is an important psychosomatic risk factor. Several Authors have studied in the last thirty years its value for diagnostic and therapeutic purposes.

Alexithymic subjects are not emotionless, instead they show a limited ability in emotional processing: this is a favouring factor to their inability in discriminating and regulating many affective states.

Clinical features, identified in various studies concerning the affirmation of alexithymic construct, have been summarized by many Authors (Taylor, Bagby et al. 1994) and are showed in table 1 (Bagby et al., 1994; Battistella et al., 2011; Nemiah and Sifneos, 1970; Sifneos, 1996; Taylor et al., 1997; Warnes, 1986).

Alexithymic subjects may show outbursts of unmotivated anger or crying but they are unable to attribute these behaviours to specific events or memories. The narrative report of these subjects is characterized by a dish communicative style, as they are not able to refer to inner experiences, desires, fears and feelings.

There are few epidemiological studies about alexithymia and they are referred to adulthood. In two studies (Sakkinen et al., 2007; Joukamaa et al., 2006) carried out on adolescents, Authors found a prevalence comprised between 8% and 16% while in two studies carried out on population, the prevalence was comprised between 33% and 39% (Gunzelmann et al., 2002; Joukamaa et al., 1996).

In many studies on adulthood the gender differences were not confirmed. Studies on adolescents and elderly people have not found significant differences in prevalence of alexithymia in both sexes (Sakkinen et al., 2007; Oukamaa et al., 2006; Gunzelmann et al., 2002; Joukamaa et al., 1996).

In the British study of Mason et al (2005) the prevalence of alexithymia in woman was conversely significantly higher than in males (Mason et al., 2005).

Sakkinen (2007) provided a prevalence of alexithymia in three separate groups of age. Among the subjects aged 12-13 years, the prevalence was 21% (boys 22%, girls 20%), among those aged 14 years it was 15% (12% boys, girls 18%) and among those aged 15-17 years it

Table 1. Signs and symptoms of alexithymic construct.

Difficult to distinguish and describe emotions from each other.
Difficult to distinguish between subjective emotional states and somatic components originating from their own body. Alexithymic subjects express their emotions especially through the physiological component, as they are unable to elaborate the subjective aspect of experience.
Limited emotional vocabulary, which leads to a considerable difficulty in communicating verbally their feelings to others.
Poverty of imaginative processes.
External oriented cognitive style.
Social conformity.

was 13% (boys 11%, girls 15%). The difference between the groups on the basis of age (younger versus older) was statistically significant.

In fact, alexithymic features have been found in a large number of pathological conditions and chronic medical diseases such as headache.

Since the 90's, in literature there are some evidences that indicate the presence of alexithymia in patients with primary headache. The evidence that has been collected mainly concern adult patients. Only a few studies have been carried out on the relationship between alexithymia and primary headache in children and adolescents. (Battistella et al., 2011; Taylor and Bagby, 2004; Wise et al., 1994; Yucel et al., 2002)

The aims of this study are:

- To clarify whether there is a significant correlation between primary headache and alexithymia in patients in developmental age compared with a control group;
- To clarify whether there are significant differences in the presence of alexithymia between patients with migraine and patients with tension-type headache.

The present work represents an observational and retrospective research.

MATERIAL AND METHODS

Our research was conducted on the Child and Adolescence Psychiatry department at Headache ambulatory. The clinical group was recruited in a period of six months and is composed by 35 subjects, 11 males (31.43%) and 24 females (68.57%) aged between 9 and 20 years (mean age: 13.17; SD = 2.833). All these patients were affected by headache. The diagnosis of headache was made according to International Classification ICHD-II, 2004 criteria. Headache Classification Committee of the International Headache Society (2004)

The control group was recruited through random assignment among subjects in full health, free from neurological and organic diseases, recruited in the family physicians and family paediatrician ambulatories. It is

composed by 35 subjects, 12 males (34.28%) and 23 females (65.71%), aged between 11 and 21 years (mean age: 15.57; SD = 2.38).

The two groups are balanced on the variable gender, because the representation of males and females is substantially similar, as showed in the percentages.

All the patients underwent the following items:

1. Structured interview with the patient, aimed to outline a detailed picture of mental functioning of the subject.
2. Administration of Twenty-item Toronto Alexithymia Scale (TAS-20) in the Italian version. The current version of Toronto Alexithymia Scale is structured in 20 items and it is a self-rating questionnaire validated for assessing alexithymia. It is based on a five-point Likert scale. Overall it is possible to obtain scores comprised between a minimum of 20 and a maximum of 100.

According to the total scores obtained by the test, subjects are considered Non-alexithymic, if the score is lower than 51; Borderline, if the score is between 52 and 60; and finally Alexithymic, if the score is equal to or greater than 61.

Statistical Analysis

The descriptive indicators used are: media, standard deviation, Pearson's correlation coefficient, rake-off, Chi squared index, t-student and Cronbach's coefficient.

The significance level was set at 5% for which you consider significant the tests whose P (Sig.) is < 0,05.

RESULTS

The diagnosis of headache type on the sample is showed in Fig. 1. The diagnosis of headache was tension-type headache in 40% of subjects and migraine in 60% of subjects. In particular the diagnosis of headache was migraine without aura in 31.42% of the sample, migraine with aura in 28.57%, tension-type headache in 31.42% and finally chronic daily headache in 8.57%. The distribution figure frequencies for age groups were substantially similar in the two samples. On the basis of

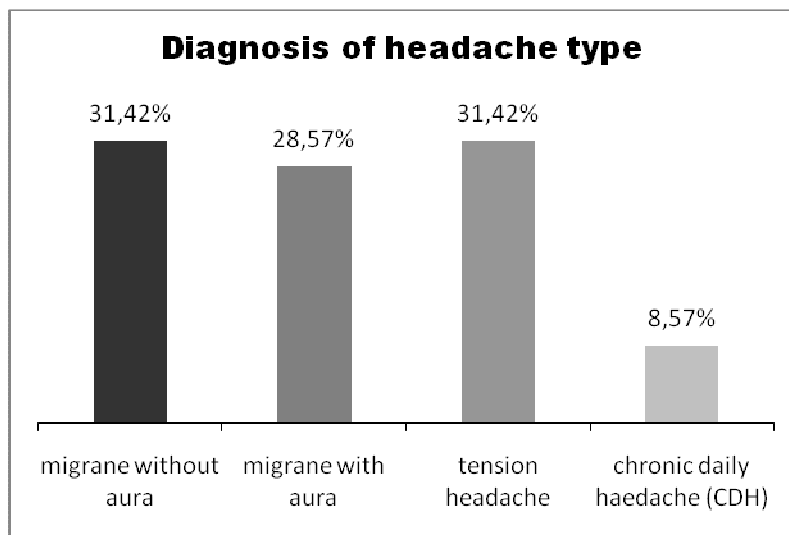


Figure 1. Percentages distribution of diagnosis of headaches.

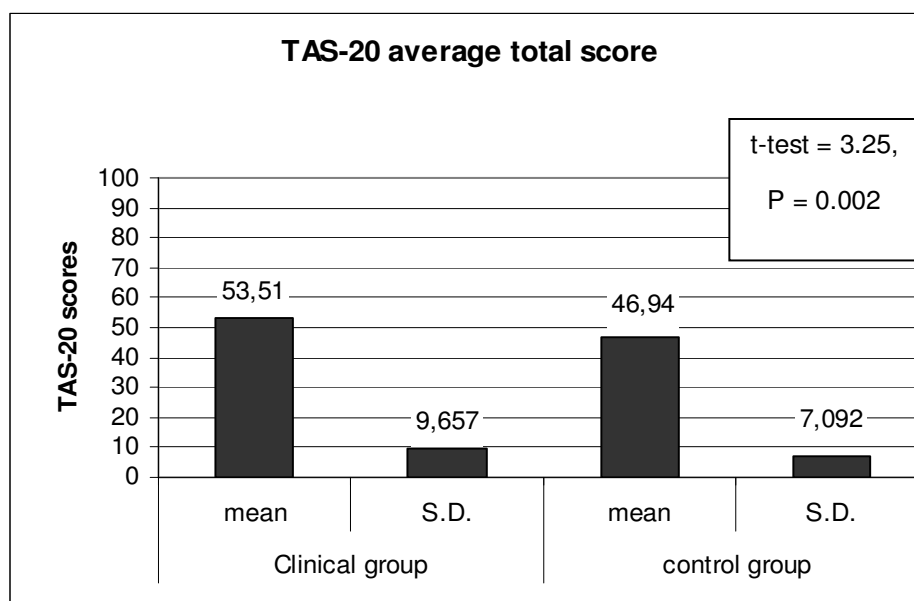


Figure 2. TAS-20 average total score in clinical and control group. (t-test=3.25; P=0.002)

alexithymia diagnosis, the results in the clinical group showed that 12 subjects (34.28%) appeared to be alexithymic, 10 subjects (28.57%) resulted borderline while the remaining 13 subjects (37.14%) were non-alexithymic. On the other hand in the control group 26 subjects (74.28%) resulted non-alexithymic, 7 subjects (20%) borderline and 2 subjects (5.17%) alexithymic.

The average score of TAS-20 in the clinical group was higher (M= 53.51, SD= 9.66) than in the control group (M= 46.94, SD= 7.09) with a significance value of $t(62) = 3.25$ and $P = 0.002$ (Fig. 2).

In order to verify if the highest score of TAS-20 in clinical group was specific for one type of headache, using t-test, we compared the average score of TAS-20 of patients diagnosed with migraine versus patients diagnosed with tension-type headache. This result was not significant (Fig. 3).

In addition, we examined whether there was a relationship between the age of subjects and their TAS-20 scores in both groups, the clinical and the control ones.

In the group of patients with headache there was not

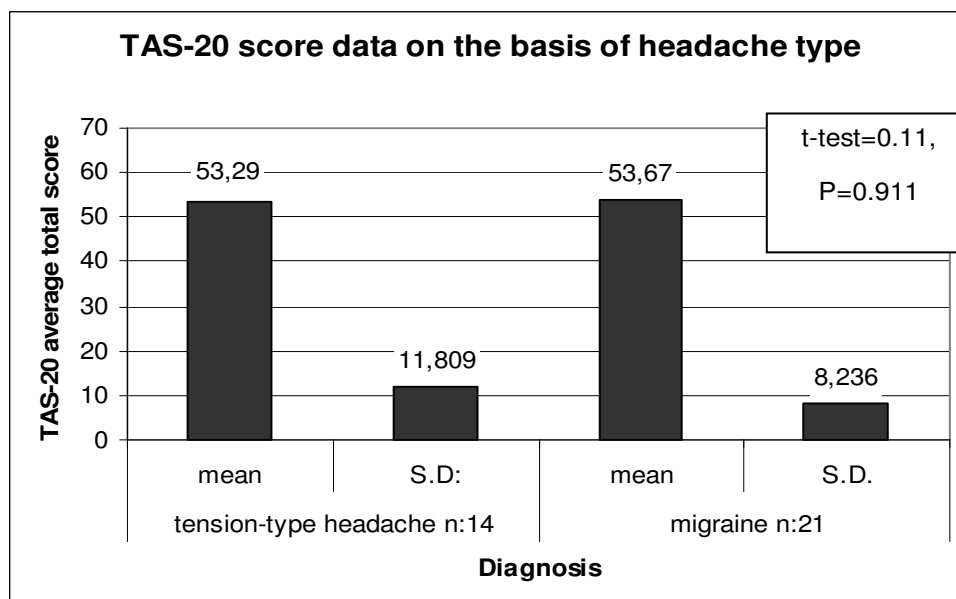


Figure 3. TAS-20 average total score in tension-type headache subjects and migraine subjects (t-test=0.11; P=0.911)

Table 2. TAS-20 average scores in males and females of clinical and control group.

		MALE			FEMALE		
		n	M	S.D.	n	M	S.D.
TAS Score	CLINICAL	11	55,45	10,71	24	52,63	9,24
	CONTROL	12	45,08	5,03	23	47,91	7,89

significant relationship between age and TAS-20 score (Pearson's correlation coefficient = $-0,154$; $P=0,378$). Moreover, the same not significant correlation was detected in the control group (Pearson's correlation coefficient = $-0,110$; $P=0,531$).

Then, in order to assess whether there was a correlation between gender and clinical and control group, we compared the average TAS-20 scores of males and females.

In the clinical group, males and females did not obtain a statistically significant difference in TAS-20 scores (t-test= $0,800$; $P=0,429$). Moreover, even in the control group there was not a significant difference between average TAS-20 scores in males and females (t-test= $-1,125$; $P=0,269$). We concluded that there was not a significant correlation between gender and groups, clinical or control, comparing the TAS-20 scores (Table 2).

Even though the relationship between age and TAS-20 scores was not significant, when calculated separately in the clinical and in the control groups, it was instead significant if calculated on the whole sample of 70

subjects, including both groups. (Pearson's correlation coefficient = $-0,270$, $P=0,024$) (Fig. 4).

This result should be interpreted considering the negative and significant relationship existing between age and TAS-20 score. Since the clinical and control samples are not large enough in size, it was not possible to detect such a result within each group considering them individually.

Instead, comparing the TAS-20 scores of males and females of the full sample, we obtained an absence of significance, as well as when we compared males and females on TAS-20 test considering the two groups individually (Fig. 5).

DISCUSSION

The TAS-20 average score in the clinical group ($M=53,51$, $SD=9,66$) was higher than in the control group ($M=46,94$, $SD=7,09$) with a statistically significant level. ($t=3,25$, $P=0,002$) (Figure 2). Battistella et al. (2010)

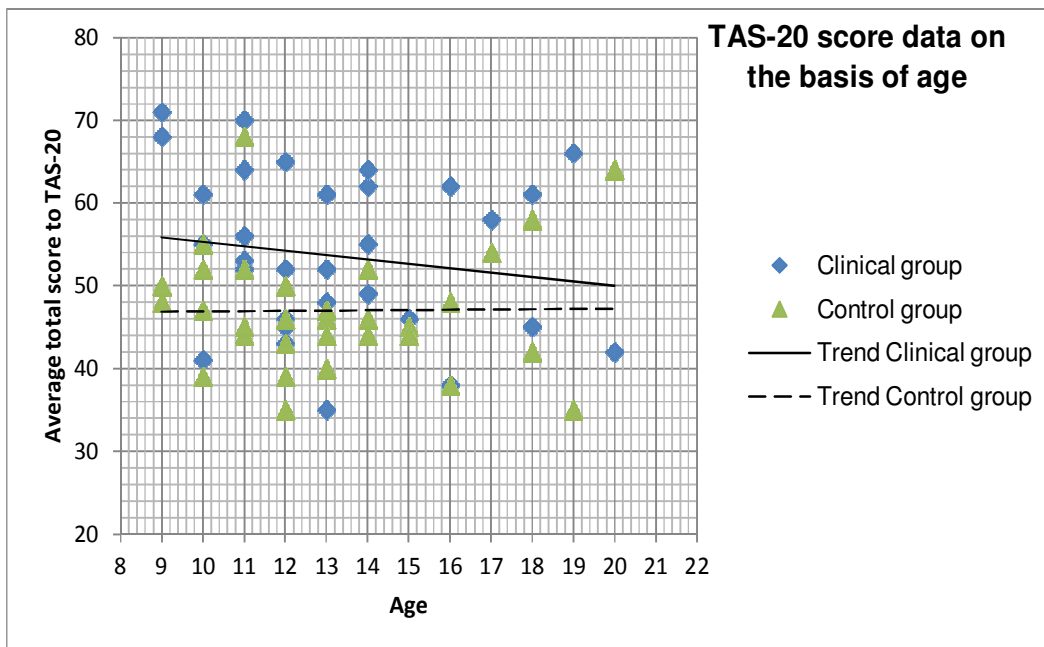


Figure 4. Relationship between age and TAS-20 score in the whole sample.

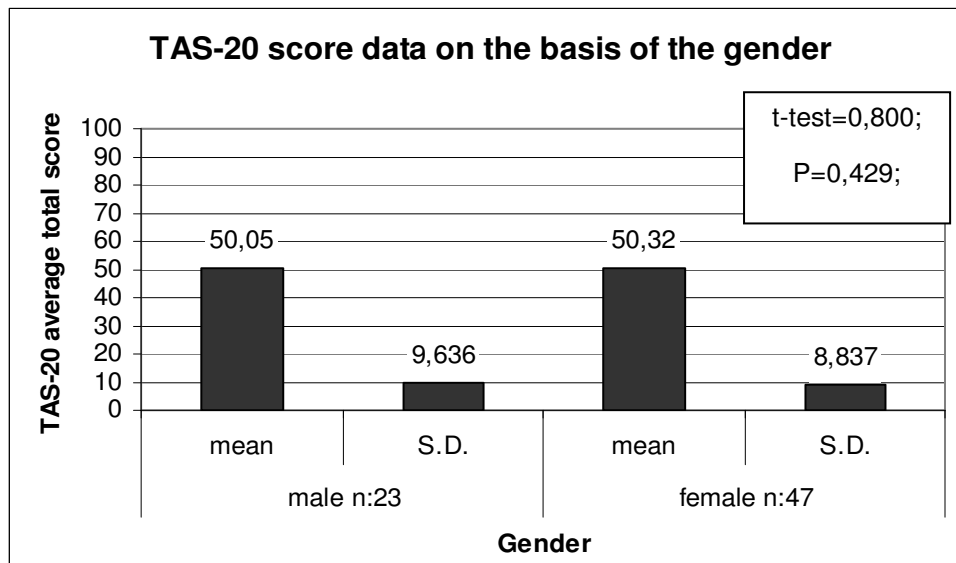


Figure 5. TAS-20 average total score in the whole sample (males and females). (t-test=0.800; P=0.429)

already reported an association between tension-type headache and alexithymia in developmental age.

There was not a significant relationship between age and TAS-20 score, if calculated for the two groups separately. We have to consider that the relationship between age and TAS-20 scores, not significant when calculated separately in the two groups, turns out significant if calculated on the full sample of 70 subjects (r

= -0.270 Pearson, P= 0.024) (Fig. 4). This result proves that there is a negative and significant relationship between age and TAS-20 score. In the clinical group and also in the control group there was not a significant difference between TAS-20 average scores in males and females. Furthermore there were not statistically significant differences in TAS-20 scores in patients with a diagnosis of tension-type headache compared with

subjects diagnosed with migraine (Figure 3). We can affirm that with increasing age, from pre-adolescence to late adolescence, alexithymia tends to decrease. According to Battistella et al. (2010), “the decline in the rate of alexithymia recorded from early to mid adolescence is consistent with the gradually improving cognitive skills relating to the processing of emotions”.

All together our data show that somatization of headache pain appears not different according to the diagnosis, but it changes according to the age. Furthermore, somatization could be related to preadolescent inability to report emotional world.

Many studies about the distribution of alexithymia in a normal adult population suggest that there is a significant difference between males and females. Particularly males are more alexithymic than females (Salminen et al., 1999; Hokalampi et al., 2000; Kokkonen et al., 2001; Mattila et al., 2006). Not all the Authors agree on this point: Guilbaud et al. (2002) found no significant differences between genders while Mason et al. (2005) reported a higher prevalence of alexithymia in girls. However, all these studies were performed in the adults. Recently two large studies about alexithymia in adolescence (Joukamaa et al., 2006; Sakkinen et al., 2007) concluded that, in contrast to those obtained for the adult population, there are no differences in alexithymia for the gender's variable. Our results are in agreement with these Authors.

The current version of TAS-20 was found to have a high internal consistency (a Cronbach's coefficient = 0.81), a good test-retest reliability over a period of three months ($r = 0.77$). It owns a structure with three factors congruent from a theoretical point of view with the construct of alexithymia. Despite the good internal consistency and homogeneity of the scale, it was found that the third factor of the TAS-20 (External oriented thinking) is very low correlated with the total scale and the other two factors (Difficulty in identifying feelings and difficulty in communicating feelings to others). One of the most important differences between the third factor and first and second factors is that the third factor contains four negative keyed items (items n. 5, 10, 18, 19) compared with only one negative item present in the second factor (item n. 4) and none in the first factor. Other Authors confirmed what is already known about the good psychometric characteristics of the TAS-20 and showed that the third factor could represent a potential cause to explain lower efficacy of the scale. This is probably due to the inversion of the scores awarded to the answers. The TAS-20 score is poorly correlated with sociodemographic variables and intelligence (Kauhanen et al., 1993; Kirkmayer, Robbins, 1993).

The cause of alexithymia arises in early childhood when the emotional experiences begin to organize themselves and to be perceived as bodily sensations. In literature, the studies about the prevalence of alexithymia supposed that adolescents aged 13 to 18 years show a

decrease in the levels of alexithymia with increasing age due to a “maturation effect”. However, only Sakkinen et al. (2007) researched and formulated the hypothesis on this idea. The authors consider adolescence as a period of great emotional, psychological and social development; thus, adolescence increases the ability to be conscious of their own emotional and psychological states and to regulate them. Therefore it has to be expected that the degree of alexithymia decreases rapidly with the development of the adolescent: in fact there is a decrease between 15 and 16 years, as is confirmed by the results obtained in our study.

Since 1990's, there are some studies indicating the presence of alexithymia in adult patients with primary headache. Instead few studies have looked about the relationship between alexithymia and primary headache in developmental age. [3,35,39,40] However, in adolescence, perhaps more often than in other phases of the life cycle, the emotional world plays a key role. The emotional ambivalence typical of adolescents, inevitable in a process of growth in which the personality and identity are not yet structured, is reflected in all aspects of their evolution. So the aim of this study is to clarify the relationship between alexithymia and headache. In fact, we have observed that the average score of the TAS-20 in the clinical group ($M = 53.51$, $SD = 9.66$) was higher than in the control group ($M = 46.94$, $SD = 7.09$), with a statistically significant level ($t(62) = 3.25$, $P = 0.002$).

CONCLUSIONS

The Italian pilot study of Battistella et al. (2010) investigated the relationship between alexithymia and tension-type headache in childhood and early adolescence, founding a statistically significant difference between the scores for alexithymia in the experimental group and the control group. This study revealed a positive association between tension-type headache and alexithymia in children. Accordingly with the data of Battistella et al. study, we investigated the relationship between alexithymia and migraine. Herein we demonstrated that in the clinical group, there are not statistically significant differences in TAS-20 scores in patients with a diagnosis of tension-type headache ($M = 53.29$, $S.D. = 11.809$) than in migraineurs ($M = 53.67$, $S.D. = 8.236$) in agreement with Wise et al. (1994). The latter Author also showed that there is not a significant difference in levels of alexithymia, depression, or anxiety between tension-type headache patients and migraine sufferers.

In conclusion, we can imagine the gradual process of physiological development of the child's growth from childhood to adolescence as a latency period until it's possible to access with the thought to the “Complex of emotions”. According to Battistella et al. (2010). “This association is consistent with the interpretation of somatic

disturbances according to the paradigm of emotional dysregulation, which is gaining more and more consent in current psychosomatic research. Alexithymia would thus represent a risk factor for the onset of medical or psychiatric, organic or functional disorders". Therefore, because of the cephalalgic patients are suffering from psychopathological disorders on high percentage, as showed by several Authors (Balottin et al., 2013; Battistella et al., 2011; Bruijn et al., 2010; Cooper et al., 1987; Lanzi et al., 1994; Mazzone et al., 2006; Taylor et al., 1997; aylor and Bagby, 2004; Wise et al., 1994; Yuecel et al., 2002), to investigate alexithymia in adolescents with headache (tension-type and/or migraineurs) represents a significant step in psychodiagnostic approach

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