

# Somatic Symptoms in Secondary School Students and Parental Attitudes

## İlköğretim İkinci Kademe Öğrencilerde Somatik Belirtiler ve Anne Baba Tutumlarının İncelenmesi

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### SUMMARY

**Objectives:** Epidemiological studies show that 5–48% of children and adolescents often experience somatic complaints. This study investigated somatic symptoms in secondary school students and the attitudes of their parents.

**Methods:** This descriptive study involved 699 secondary school students at three state and five private schools in Kadıköy from October 2013–February 2014. The data were collected using an information form, Child Somatization Inventory and Parent Attitude Scale and were analyzed using descriptive statistical analysis, Pearson correlation analysis and the t-test.

**Results:** The average age of the students was 12.93±1.06. Of the students, 49.9% were female, and 35.3% were in private schools. A significant difference (t=3.53, p=.002) was found based on the type of school attended with private school students seen more frequently with somatic symptoms (private X=13.0±1.25; state X=10.0±9.5). There were also differences according to the type of school attended in parental attitude – control/monitoring (t=4.43; p=.003), and in the psychological autonomy subscale (t=2.71, p=.040). Private school students' perception of their parents' attitude were more controlling/supervisory than the public school students (control/supervision; private X=15.3±5.1; public X=13.8±4.0) and allowing less psychological autonomy than them (private X=26.7±4.5; states X=27.6±4.3). Parental tolerance was significantly associated with somatic symptoms (t=4.695, p=.001), and students who perceived their parents as tolerant had more somatic symptoms (X=14.31±11.86).

**Conclusion:** This study shows that parental attitudes and somatic symptoms vary as to the type of school. Students had more somatic symptoms when they perceived their parents as tolerant/permitting of those somatic symptoms.

**Keywords:** Parents' attitudes; somatic symptoms; students.

### ÖZET

**Amaç:** Epidemiyolojik çalışmalar çocuk ve ergenlerin %5–48'inin somatik belirtileri sıklıkla deneyimlediklerini göstermektedir. Bu çalışmada ilköğretim ikinci kademe öğrencilerinde anne-baba tutumları ve somatik belirtiler arasındaki ilişkilerin incelenmesi amaçlanmıştır.

**Gereç ve Yöntem:** Tanımlayıcı tipteki çalışmanın örneklemini, Kadıköy'de üç devlet ve beş özel ilköğretim okulunda, Ekim 2013–Şubat 2014 tarihleri arasında ikinci kademe öğrenim gören, araştırmaya katılmayı kabul eden 699 öğrenci oluşturmuştur. Araştırma verileri Bilgi Formu, Çocuk Somatizasyon Envanteri ve Anne-Baba Tutum Ölçeği kullanılarak toplanmış, tanımlayıcı istatistiksel analizler, pearson korelasyon analizi ve t-testi ile değerlendirilmiştir.

**Bulgular:** Öğrencilerin yaş ortalaması 12.93±1.06'dır, %49.9'u kız, %35.3'ü özel okula devam etmektedir. Öğrencilerin cinsiyet, ailede tek çocuk olma, eğitime devam edilen sınıf, anne-baba eğitim ve çalışma durumları ile anne-baba tutumları ve somatik belirtiler açısından anlamlı farklılık bulunmamaktadır (p>0.05). Öğrencilerin devam ettikleri okula göre somatik belirtiler arasında anlamlı fark bulunmuştur (t=3.53; p=.002) ve özel okula devam eden öğrencilerde somatik belirtiler daha sık görülmektedir (özel X=13.0±1.25; devlet X=10.0±9.5). Öğrencilerin devam ettikleri okula göre anne-baba tutumları incelendiğinde; kontrol/denetleme (t=4.43; p=.003) ve psikolojik özerklik alt boyutlarında anlamlı fark bulunmuştur (t=2.71; p=.040), özel okullara devam eden öğrenciler anne- babalarını devlet okullarına devam eden öğrencilere göre daha fazla kontrolcü/denetleyici ve daha az psikolojik özerklik sağlayıcı olarak algılamaktadır (kontrol denetleme; özel X=15.3±5.1; devlet X=13.8±4.0 ve psikolojik özerklik özel X=26.7±4.5; devlet X=27.6±4.3). Ana-baba tutumlarından sadece izin verici/müşamahakar tutum ile somatik belirtiler arasında anlamlı farklılık bulunmuştur (t=4.695; p=.001). Ana-babalarını izin verici/ müşamahakar olarak algılayan öğrencilerde somatik belirtiler daha yüksektir (X=14.31±11.86).

**Sonuç:** Çalışmanın sonuçlarına göre; ana-baba tutumları ve somatik belirtilerin öğrencilerin devam ettikleri okula göre farklı olduğu ve ana-babalarını izin verici/ müşamahakar olarak algılayanlarda somatik belirtilerin yüksek olduğu belirlenmiştir.

**Anahtar sözcükler:** Anne-baba tutumları; somatik belirtiler; öğrenci.

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### Introduction

The relationship between psychological factors and disease, in other words between mind and body, has been the focus of research for centuries, leading to the creation of the field of "psychosomatic medicine."<sup>[1]</sup> Somatization is a disorder which is characterized by bodily complaints and symptoms that cannot be explained by physical findings, and by frequent attempts to seek medical assistance.<sup>[2]</sup>

In the general population, functional medical symptoms which cannot be explained are common in children. However, somatization rarely meets the criteria of diagnosis.<sup>[3-5]</sup>

Bodily complaints such as headache, abdominal pain and lack of energy, which are also symptoms of somatization, are common in children and adolescents. Except for pain, the most common somatic symptoms are labored breathing, nausea, vertigo, exhaustion and fatigue.<sup>[1,6]</sup> Of the school children, approximately 10% to 30% are affected by somatic symptoms.<sup>[7]</sup> Children and adolescents who experience somatic symptoms frequently have functional problems such as social isolation, poor peer relationships, school absences and academic difficulties, all of which harm their daily lives. In children and adolescents, somatic problems are frequently accompanied by depression and anxiety.<sup>[7]</sup>

The relevant literature reports that 90% of all somatic disorders begin before the age of 25, and the very first symptoms are frequently seen in adolescence.<sup>[2]</sup> However, there are few studies on somatization in childhood and adolescence in Turkey.<sup>[6,8]</sup>

Somatic disorders have a multifactor etiology. Children have a limited verbal capacity to express their feelings, and it is probable that they display their worry and distress by means of physical symptoms.<sup>[9]</sup> Research shows that there is a significant relationship between somatization in children and adolescents and family conflicts, and the deterioration of family functionality is one of the reasons for somatization disorders.<sup>[4,10,11]</sup> Factors supporting somatization include the presence of physical diseases or disease behaviors in family members, early experiences in attracting interest and love when they were physically unwell, as well as secondary acquisitions.<sup>[12,13]</sup> Family system theoreticians suggested that the nature of family interactive patterns plays an important role in the etiology of somatic symptoms in children, as well as their development into a chronic disorder. On the other hand, behavioral theoreticians stress that specific learning mechanisms are influential in the etiology of somatic problems.<sup>[1,9]</sup> From the viewpoint of developmental psychopathology, somatization can be explained both by individual factors such as inadequacy in managing negative feelings and by familial risk factors, such as the prevention of emotional expression.<sup>[9,14]</sup>

Somatic symptoms may have a specific function in the family to protect and maintain the functions of the family, and sometimes prevent conflicts. A child's physical problems may serve to maintain the unity of the family or postpone conflicts, sometimes making them seem less important.<sup>[15]</sup> For this reason, a child's somatic symptoms may be unconsciously supported by others, and children may be exposed to less stress as a result of their somatic symptoms. Schulte and Petermann's (2011) study on somatoform disorders in children and adolescents, called for further research to illuminate the relationship between familial factors and the somatic symptoms and development of somatoform disorders in children and adolescents.<sup>[13]</sup>

The literature suggests that as there are many family-related factors affecting the appearance of somatic symptoms, as well as their development into chronic disorders, this implies that there is a relationship between somatic symptoms and parental attitudes, which is the focus of this study.

## **Tools and Methodology**

### **The Objective and Design of the Study**

This is a descriptive and time-series study. The study aimed to analyze the relationship between parental attitudes and somatic symptoms in secondary school students.

### **The Population and Sample of the Study**

The study was conducted with secondary school students in Kadikoy, Istanbul, between October 2013 and March 2014.

The population of the study included 16,081 secondary school students in Kadikoy. The authors calculated the sample size (N=657) using the formula of sample calculation with a known population, and contacted 721 students in three public and five private schools that provided consent for the study. The students were enrolled in these schools between the given dates, agreed to participate in the study and did not have any verbal communication disorders. The study was completed with 699 students who completed the data collection tools.

### **Ethical Considerations**

The authors received consent from Marmara University's Medicine Faculty's Local Ethical Committee, as well as the written consent of the Provincial National Education Directorate for the schools in Kadikoy, Istanbul. Before proceeding with data collection, the authors informed the principals and vice-principals of the schools in question about the quality and objective of the study, and the scales included in the research. The authors collected the study data on a voluntary basis, after providing information to the students in classrooms.

### **Data Collection Tools**

The socio-demographic data were collected using the information form, those regarding somatic symptoms were collected using the Child Somatization Inventory (CSI-24) and those regarding parental attitudes were collected using the Parental Attitude Scale (PAS).

The information form included 11 questions about the socio-demographic and familial characteristics of the participating children.

The Child Somatization Inventory-24 (CSI-24) / Child Notification is a 24-question scale which was created by Walker et al. (1991-2009). Kadioglu et al. (2012) confirmed its validity and reliability analyses in Turkish. The CSI-24 is a 5-point Likert-type scale which includes scores from 0

to 4, and determines the somatic symptoms shown by the child in the past two weeks. The total score obtained from the scale is between 0 and 96. Higher scores indicate that the somatic symptoms are frequent. In the study by Kadioglu et al. (2012), the Cronbach's alpha internal consistency coefficient was 0.91.<sup>[6]</sup> This study found the CSI-24 Cronbach's internal consistency coefficient as 0.92.

The Parental Attitude Scale (PAS) was created by Lamborn, Mounts, Steinberg and Dornbush. It is a 26-item scale which includes three sub-dimensions; acceptance/interest, control/supervision and psychological autonomy.<sup>[16]</sup> The validity and reliability analyses of the scale was confirmed by Yilmaz (2000).

Those who obtained upper-intermediate scores on the acceptance/interest and control/supervision sub-dimensions demonstrated a "democratic" parental attitude. Those with scores below the average showed a "negligent" parental attitude. Participants whose scores were below average in the acceptance/interest dimension and above average in the control/supervision dimension display an "authoritarian" parental attitude. Finally, those with above average acceptance/interest scores and below average in the control/supervision dimension demonstrate a "complaisant/permissive" parental attitude. The sub-dimensions of the scale (authoritarian, negligent, complaisant/permissive and democratic parental attitudes), which were calculated based on the mean scores, made it possible to do comparative statistical analyses.<sup>[16]</sup> In the study by Yilmaz (2000), the Cronbach's alpha internal consistency coefficient was 0.72 in the acceptance/interest dimension; 0.76 in the control/supervision dimension and 0.82 in the psychological autonomy dimension.<sup>[16]</sup> In this study, the Cronbach's alpha internal consistency coefficient was 0.72 in the acceptance/interest dimension; 0.76 in the control/supervision dimension; 0.78 in the psychological autonomy dimension, and 0.71 for the entire scale.

### Statistical Analysis

The study evaluated the socio-demographic data, which were the independent data, based on the descriptive statistics. The authors employed the Pearson correlation analysis to evaluate the correlation between somatic symptoms and parental attitudes, both of which were the dependent variables. Somatic symptoms and parental attitudes were compared using the t test.

### Findings

The participating students were aged between 11 and 15 years, with an average age of  $12.93 \pm 1.06$ . Of the participants, 50.1% were males. Of the participating students, 35.3% were enrolled at private schools, 64.7% were enrolled at public schools, and 32.9% were in the seventh grade (Table 1).

**Table 1.** Sociodemographic characteristics of the students

Sociodemographic characteristics		
Age	X=12.93	SD=1.06
	n	%
Gender		
Female	349	49.9
Male	350	50.1
School		
Private School	247	35.3
Public School	452	64.7
Grade		
Fifth grade	77	11
Sixth grade	186	26.6
Seventh grade	206	29.5
Eighth grade	230	32.9

Of the participating students, 53.2% were members of nuclear families. Of the students' mothers, 46.6% were university graduates and 51.4% were employed. Of the students' fathers, 53.4% were university graduates and 95.9% were employed (Table 2).

The most common somatic symptoms among students were 30.5% headache ( $1.91 \pm .84$ ), 29.8% low energy

**Table 2.** Familial characteristics of the students

Familial characteristics	n	%
Sequence number in all the children in the household		
First child	404	57.8
Second child	225	32.2
Third child	54	7.7
Fourth child	14	2.0
Fifth child	2	0.3
The number of siblings		
Only child	243	34.8
Two siblings	324	46.4
Three siblings	102	14.6
Four siblings	19	2.7
Five siblings	11	1.6
Educational level of the mother		
Illiterate	18	2.6
Literate	35	5.0
Secondary school	114	16.3
High school	206	29.5
Higher education	326	46.6
Employment status of the mother		
Employed	359	51.4
Unemployed	340	48.6
Educational level of the father		
Illiterate	9	1.3
Literate	30	4.3
Secondary school	98	14.0
High school	189	27.0
Higher education	373	53.4
Employment status of the father		
Employed	670	95.9
Unemployed	29	4.1

**Table 3.** A comparison of parental attitudes and somatic symptoms by type of school that students attend

School	Parental attitudes		
	Acceptance/interest	Control/supervision	Psychological autonomy
	Mean±SD	Mean±SD	Mean±SD
Private school (n=247)	15.6±4.5	5.3±5.1	26.7±4.5
Public school (n=452)	15.5±4.7	3.8±4.0	27.6±4.3
	t=0.12/p=.541	t=4.43/p=.003	t=-2.71/p=.040
Somatic symptoms			
	Mean±SD		
Private school (n=247)	13.0±12.5		
Public school (n=452)	10.0±9.5		
	t=3.53/p=.002		

(.82±.29), 28.8% pain in arms or legs (.92±.33), and 28.6% stomach ache or abdominal pain (.82±.47). In this study, students' mean score on somatic symptoms was 12.31±6.8 (min 1.8±.29-max 58.0±15.8).

Regarding the parental attitudes of the participating students; the control/supervision sub-dimension score was 27.33±4.40; the acceptance/interest sub-dimension score was 15.54±4.69, and the psychological autonomy sub-dimension score was 4.34±3.51.

In terms of the socio-demographic and familial characteristics by the type of school attended, the only significant difference was between the educational levels of their parents. Of the mothers of the private school students, 74.1% were university graduates while this rate was 31.6% ( $X^2=26.31$ ;  $p=0.02$ ); in the public school students' mothers. Of the private school students' fathers, 84.2% were university graduates and this rate was 36.5% in the private school students' fathers ( $X^2=21.41$ ;  $p=0.03$ ).

There was no significant difference between the students' independent variables which were student's gender, being an only child, and parents' employment status and student's grade, and the dependent variables which were parental attitudes and somatic symptoms ( $p>0.05$ ). Of the independent variables of the study, the only significant difference was between somatic symptoms, parental attitudes and the student's school type.

There was a highly significant difference when comparing the prevalence of somatic symptoms by the school type of the student, where somatic symptoms were seen more frequently in private school students than in public school students. An analysis of parental attitudes by the students' school types indicated that there were significant differences in the control/supervision and psychological autonomy sub-dimensions. Private school students perceived their parents as being more

controlling/supervisory and allowing less psychological autonomy than students in public schools (Table 3).

An analysis of the correlation between parental attitudes and somatic symptoms indicated that the only intermediary, negative and significant correlation was between the psychological autonomy sub-dimension and somatic symptoms (psychological autonomy and somatic symptoms  $r=-.65$ ,  $p=0.01$ , acceptance/interest and somatic symptoms  $r=-.15$ ,  $p>0.05$ , and control/supervision and somatic symptoms  $r=-.19$ ,  $p>0.05$ ).

An analysis of somatic symptoms by democratic, negligent, authoritarian and complaisant/permissive parental attitudes showed that the only significant difference was between complaisant/permissive attitude and somatic symptoms ( $t=4.695$ ;  $p=.001$ ). Somatic symptoms were more common in the students who thought that their parents were complaisant/permissive (14.31±6.86).

## Discussion

The interaction of biological, environmental, psychological and social factors affects the development of somatic complaints, as well as their development into chronic disorders. Children and adolescents frequently experience somatic pains in their school years, and these pains impact upon both children and their parents. However, there are very few studies in the relevant literature that cover the school years.<sup>[1,4,17]</sup> This study contributes to the literature with the analysis of the relationship between somatic symptoms in school age adolescents and the attitudes of their parents.

This study was conducted with children between 11 and 15 years age, and the mean score of somatic symptoms is 12.31±6.8. Sisman et al.'s (2013) study with school children found that the mean score of somatic symptoms was 12.85±12.16,<sup>[8]</sup> which is consistent with the findings of this study.

The most common somatic symptoms in students were headache, decrease in energy, pain in arms or legs, and stomach ache or abdominal pain. In the study by Sisman et al. (2013), the most common somatic symptoms were headache, stomach ache or abdominal pain, pain in arms or legs and decreased energy.<sup>[8]</sup> Similarly, the study by Vila et al. (2009) found that adolescents frequently experienced headache, low energy, muscular pain, dizziness and upset stomach.<sup>[18]</sup>

The findings of this study are also consistent with other studies on somatic symptoms in children and adolescents,<sup>[1,6]</sup> in that somatic symptoms are usually related to pain. Chronic or repetitive abdominal pain is a common symptom in children and adolescents, and usually no organic reason can be detected.<sup>[15,19,20]</sup> Cases of pain may be created by familial or psychosocial factors. The appearance and continuance of pain may be facilitated by a variety of situations such as insufficient family support, weak family ties, and fathers with physical or psychological problems.<sup>[15]</sup> When the study findings and literature results are analyzed jointly, it seems that pain in children and adolescents which cannot be explained medically should be investigated with a holistic approach.

The school type of the students was the only independent variable that had a significant correlation with the dependent variables (somatic symptoms and parental attitudes). In this study, somatic symptoms did not vary by gender and educational level of mothers. However, the study by Sisman et al. (2013) found that somatic symptoms were significantly more common in female students than they were in male students. Female students whose mothers were university graduates had much lower somatization scores than those whose mothers were primary, secondary and high school graduates. In male students, the education levels of mothers were not related to somatic symptoms. There was no significant difference between the education levels of fathers, economic status, family type, number of children and somatization scores.<sup>[8]</sup> The study findings show more similarities, other than the similarities in the findings regarding gender and education levels of mothers. Therefore, the authors believe that there is a need for further studies analyzing somatic symptoms by gender and the mothers' educational levels.

When somatic symptoms were compared according to school type, it was observed that somatic symptoms were more common in private school students. This finding may be explained by the fact that both private school students and their parents have great expectations of academic achievement. According to Geralda (1999), an expectation of high academic achievement leads to the creation of high standards of behavior and achievement for children and adolescents, which in turn leads them to be anxious. Physical problems reduce high performance expectations to a secondary place which, though only temporarily, helps diminish anxiety.<sup>[4]</sup> A

relevant study found that 55.93% of school children started to have pain after they had school performance problems.<sup>[3]</sup>

This study showed that the private school students perceived their parents to be more controlling/supervisory and allowing less psychological autonomy than public school students perceive their parents to be. Since parental attitude is open to many influences from the personality of parents to social and cultural characteristics, further studies are needed on this subject.

An analysis of somatic symptoms by democratic, negligent, authoritarian and complaisant/permissive parental attitudes indicated that somatic symptoms were more common in children who perceive their parents as complaisant/permissive. According to Yavuzer (1994), an over-permissive parental attitude leads to a state where the child dominates his or her parents, his or her negative behaviors are tolerated, and there is no restriction to his or her behaviors.<sup>[21]</sup> This attitude may support somatic symptoms. Garber (1998) said that parents are inclined to be more permissive about their children's physical symptoms than psychological symptoms. They may view somatic symptoms in a better light and be more willing to accept somatic symptoms than psychological symptoms.<sup>[22]</sup> For this reason, the authors believe that complaisant/permissive parents may be more tolerant of their children's somatic symptoms, and these children may somatize troubled situations more acutely.

### Study Limitations

The sample of the study included the students in the secondary schools in Kadikoy, Istanbul. In the study, the socio-demographic characteristics other than the school type of students did not affect somatic symptoms and parental attitudes. Except for the educational levels of parents, private and public school students are homogeneous regarding their socio-demographic characteristics. The study findings cannot be generalized to students with different socio-demographic characteristics.

### Results and Suggestions

The study findings showed that somatic symptoms are not very common in secondary school students. Moreover, somatic symptoms and parental attitudes did not vary by certain variables including gender, being an only child, or educational level and employment status of parents. The frequency of somatic symptoms and parental attitudes yet varied by the school type of the students (public or private). Somatic symptoms were also more common in the children who thought that their parents were complaisant/permissive. Based on the study findings, the authors suggest that further studies be conducted on children's and adolescents' somatic symptoms and related factors, with samples which have different socio-demographic characteristics, and that the results

be incorporated into community mental health nursing and school nursing.

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