İSTANBUL BİLGİ ÜNİVERSİTESİ

SOSYAL BİLİMLER ENSTİTÜSÜ
KLİNİK PSİKOLOJİ YÜKSEK LİSANS PROGRAMI

PSYCHOSOMATIC SYMPTOMS AND EMOTIONS: THE RELATIONSHIP AMONG EMOTION REGULATION, DEMOGRAPHIC VARIABLES AND PSYCHOSOMATIC SYMPTOMS IN A UNIVERSITY SAMPLE

ASLI ÖZDEN

İstanbul
2015

YARD. DOÇ. DR. ZEYNEP ÇATAY ÇALIŞKAN

Psychosomatic Symptoms and Emotions: The Relationship

Among Emotion Regulation, Demographic Variables, and

Psychosomatic Symptoms in a University Sample

Psikosomatik Semptomlar ve Duygular: Bir Üniversite

Örnekleminde Duygu Düzenleme, Demografik Değişkenler ve

Psikosomatik Semptomlar Arasındaki İlişki

Aslı Özden

111629013

Tez Danışmanı: Yard. Doç. Dr. Zeynep Çatay Çalışkan:

Jüri Üyesi: Prof. Dr. Diane Sunar:

Jüri Üyesi: Doç. Dr. Safiye Serra Müderrisoğlu:

Tezin Onaylandığı Tarih: 21/5/2015

Toplam Sayfa Sayısı: 140

Anahtar Kelimeler (Türkçe)

1) Duygu Düzenleme
2) Psikosomatik Semptomlar
3) Aleksitimi
4) Ailesel Faktörler

Anahtar Kelimeler (İngilizce)

1) Emotion Regulation
2) Psychosomatic Symptoms
3) Alexithymia
4) Familial factors

ABSTRACT

The aim of this study was to investigate the relationship between several demographic, familial and emotional factors and the tendency to develop psychosomatic symptoms in a university population. A survey of the literature shows that difficulties in emotion regulation may have an impact on the tendency to develop psychosomatic symptoms. Furthermore, the tendency to develop psychosomatic symptoms has been found to be related to a number of demographic and familial variables. In this study, the tendency of developing psychosomatic symptoms was investigated in relation to the individuals' emotion regulation capacity and the kind of emotion that the individual has most difficulty with. Parental health complaints and whether or not the individuals or his or her parents have been diagnosed medically were also taken into consideration. Those variables were evaluated with Correlational, ANOVA and Multiple Regression Analyses. The sample was composed of 282 undergraduate students. They were evaluated with a Demographic Form, Parental Emotion Management Scale, Toronto Alexthymia Scale, and Somatization Scale. The findings confirmed the relationship between difficulties in emotion regulation and the tendency to develop psychosomatic symptoms. In particular, the relationships between emotion dysregulation of worry and sadness, alexithymia and the tendency to develop psychosomatic symptoms were found to be significant. Parental health problems, individual's medical history, gender and maternal education level were also found to be

significant predictors of frequency of experiencing psychosomatic symptoms in this sample.

Key Words:

1. Emotion regulation
2. Psychosomatic symptoms
3. Alexithymia
4. Familial factors

ÖZET

Bu araştırmanın amacı çeşitli demografik, ailesel ve duygusal faktörlerle psikosomatik semptom geliştirme eğilimi arasındaki ilişkiyi bir üniversite örnekleminde incelemektir. Literatür taraması psikosomatik semptom geliştirme eğilimi üzerinde duygu düzenleme zorluklarının bir etkisi olabileceğini göstermiştir. Aynı zamanda psikosomatik semptom geliştirme eğiliminin bazı demografik ve ailesel değişkenlerle ilişkili olduğu bulunmuştur. Bu araştırmada, psikosomatik semptom geliştirme eğiliminin bireyin duygu düzenleme kapasitesi ve zorlandığı duygu türüyle ilişkisi incelenmiştir. Katılımcıların ebeveynlerin sağlıklarına dair şikayetleri ve ebeveynlerinin tıbbi tanı alıp almaması da araştırma dahilinde göz önünde bulundurulmuştur. Bu değişkenler Korelasyon, ANOVA, ve Çoklu Regresyon Analizleri ile değerlendirilmiştir. Örneklem 282 üniversite öğrencisinden oluşmaktadır. Katılımcılar Demografik Bilgi Formu, Ebeveyn Duygu Yönetmimi Ölçeği, Toronto Aleksitimi Ölçeği ve Somatizyon Ölçeği ile değerlendirilmiştir. Sonuçlar duygu düzenlemesindeki zorlukla psikosomatik semptom geliştirme eğilimi arasında ilişkiyi doğrulamıştır. Özellikle kaygı ve üzüntünün düzenlenememesi ve aleksitimi ile psikosomatik semptom geliştirme eğilimi arasındaki ilişkiler anlamlı bulunmuştur. Ebeveyn sağlık problemleri, katılımcının tıbbi öyküsü, cinsiyet, ve annenin eğitim seviyesi de bu örneklemde psikosomatik semptom sıklığını öngören anlamlı değişkenler olarak bulunmuştur.

Anahtar Kelimeler

1. Duygu Düzenleme

2. Psikosomatik Semptomlar

3. Aleksitimi

4. Ailesel Faktörler

ACKNOWLEDGEMENTS

This thesis is the last step that I need to pass before graduating clinical psychology master's program. I feel grateful for my professors and my friends that had contributed to me during this program.

First of all, I would like to thank my thesis committee. I would like to acknowledge Asst. Prof. Zeynep Çatay Çalışkan who had been my thesis advisor during this study. She helped me a lot during this journey, both for the thesis and during the master's program, with her guidance, patience, encouragement and support. She contributed a lot to me during the process of being a clinical psychologist. I would like to express my gratitude to Prof. Diane Sunar for her enormous guidance and help. She was both containing and advisory to the work that I had done. She pointed out lots of things that I had missed. I am also thankful for Assoc. Prof Serra Müderrisoğlu for her supervision and constructive comments during this process. This study cannot be done without their guidance and emotional support.

Secondly, I would like to thank all of my professors and my supervisors during this program. I feel grateful to be a part of this program. I would like to thank to Murat Paker, Melis Tanık and Peykan Gökalp who were contributed a lot to me during this program.

I would like to thank to my fellow friends of clinical psychology program for their containment, support and accompany during these three years to become who I am. In particular, I thank Zeynep Güney, Ecem Çoban, Aylin Erbahar, Merve Minkari, Merve Yılmaz, Dicle Gençer and Burçak Özdemir. With their presence, this program becomes a terrific

experience. Among all, I would like to express my gratitude to Zeynep Güney who put such a great effort during data collection.

I would really appreciate Başak Akdoğan, for her help during data collection, statistical analyses and editing processes. She was like a secret statistical help for me. I also would like to thank my friends Aynaz Uğur and Ece Doğrular who helped me a lot during data collection. I would like to thank to my flatmate Beki Nil Levi who was patient and encouraging during this program.

I especially would like to express my gratitude to my psychoanalyst who helped me a lot to become who I am. I feel thankful for the patience, support, encouragement and regulation that he provided.

Finally, I would like to thank for the loved ones. I would like to thank my dear cousin, Cem Şimşek who edited my thesis. He was a real mentor for me. I feel very lucky to have a big brother like him.

I would like to thank my mother, Prof. Dr. Serap Özdemir, and my father, Prof. Dr. Akın Özden who have been supportive and present whenever I need them. Both of them showed me love, support, patience, guidance, and hard work. They encouraged me to explore whatever I would like to do. Thank you for being such amazing parents.

Lastly, I would like to thank to my life partner, Can Saydam. There are not enough words that I can use to express my feelings for you. Thank you for love and joy that you bring to my life. I feel so lucky to have such a loving relationship with you.

TABLE OF CONTENTS

Abstract i

Özet iii

Acknowledgements v

Table of Contents vii

List of Tables x

INTRODUCTION 1

1. Emotion and Emotion Regulation 2

1.1Theories of Emotion and Emotion Regulation 2

1.2 Emotion Regulation 4

1.3Affect Regulation 6

1.4 Emotion Dysregulation 7

1.5 Emotion Management 8

1.6 Alexithymia 10

2. Psychosomatic Symptoms 14

2.1 Early Psychoanalytical Perspective on Psychosomatic Symptoms 17

2.1.1 Freud's View 17

2.1.2 Franz Alexander's View 18

2.2 Contemporary Perspectives 18

2.2.1. Paris School of Psychosomatics 19

2.2.2Attachment Perspective 22

2.2.2.1 Attachment, Modeling and Somatization 24

2.2.3. Affect Regulation/Dysregulation Perspective 26

2.3 Epidemiology of Psychosomatic Symptoms 29

3. The relationship between the Demographic Factors and Psychosomatic Symptoms 30

4. The relationship between emotions and psychosomatic symptoms 33

4.1 The Relationship between Anxiety and Psychosomatic Symptoms 40

4.2 The Relationship between Anger and Psychosomatic Symptoms 44

4.3 The Relationship between Sadness and Psychosomatic Symptoms 47

5. Current Study 49

5.1. Purpose of the Study 49

5.2. Hypotheses 51

METHOD 53

1. Sample 53

2. Instruments 56

3 Procedure 52

RESULTS 64

1. Descriptive Analysis

1.1. Descriptive Analysis for Demographic Variables 64

1.2. Descriptive Analysis of Study Variables of Emotion Regulation and psychosomatic symptoms 67

2. The Relationship between Emotion Management Strategies and Psychosomatic Symptoms 70

3. The Relationship between Familial Factors and Psychosomatic Symptoms 75

4. The Relationship among Emotion and Familial Factors and Psychosomatic Symptoms 79
5. The Relationship between Demographic variables and Psychosomatic Symptoms 82
5.1. The Relationship between Gender and Psychosomatic Symptoms 82
5.2. The Relationship between Socio-Economic Status and Psychosomatic Symptoms 83
6. Additional Analyses 85
6.1. Descriptive Analysis of Reported Physical Illness 85
6.2. Regression by Gender 88
DISCUSSION 91
1. Emotional Factors 93
1.1. Emotion Regulation and Psychosomatic Symptoms 93
1.2 Alexithymia 100
2. Familial Factors 102
3. Demographic Factors 108
3.1. Gender and Psychosomatic Symptoms 108
3.2. Socio Economic Status and Psychosomatic Symptoms 112
4. The Relationship among Emotion Dysregulation, Alexitymia and Psychosomatic Symptoms 117
5. Summary, Strengths, Limitations, Future Directions 119
REREFENCES 122
APPENDICES 130
APPENDIX A Consent Form 130
APPENDIX B Demographic Form 132

APPENDIX C Parental Emotion Management Scale (PEMS) 134

APPENDIX D Toronto Alexithymia Scale (TAS-20) 138

APPENDIX E Somatization Scale 139

LIST OF TABLES

Table 1 : Demographic Background of the Sample 53

Table 2: University Majors of the Sample 55

Table 3: Descriptives for Maternal Education 65

Table 4: Descriptives for Paternal Education 65

Table 5: Descriptives for Socio-Economic Status 65

Table 6: Descriptives for Medical Diagnosis 66

Table 7: Parental Health Complaints 66

Table 8: Descriptives for PEMS, TAS-20 and SS 68

Table 9: Descriptives for PEMS, TAS-20 and SS for Females 69

Table 10: Correlation Matrix of Emotion Regulation Strategies, Alexithymia, and Psychosomatic Symptoms 71

Table 11: Correlations among Emotion Regulation of Anger, Sadness, and Worry, Alexithymia and Psychosomatic Symptoms 73

Table 12: Regression Coefficients 80

Table 13: Frequency of Psychosomatic Symptoms based on gender 82

Table 14: Frequency of Psychosomatic Symptoms based on Parental education 83

Table 15: Descriptives of Reported Physical Illnesses 87

Table 16: Regression Coefficients for Females 89

Table 17: Regression Coefficients for Males 90

INTRODUCTION

The relationship between the mind and the body has attracted attention of scientists for decades. In the psychology and the medical literature, a change in the perspective regarding the mind and the body relation appears. During the 20th century, psychologists believed in the mind-body dualism where the mind and the body were seen as separate entities. This perspective has been mainly replaced by the view that the mind and the body were interconnected. There is a continuum, a spectrum between the mind and the body. Every person has one's own place in this spectrum regarding their physical and psychological well-being (Meissner, 2006).

Theoretical and empirical studies on the psychosomatic processes indeed reveal the relationship between the mind and the body. Psychosomatic symptoms involve experiencing psychological experiences as if it is physical, on the body. Regarding psychosomatic symptoms, the relationship between emotion regulation and psychosomatic symptoms appeared to be investigated. Somatization is the process in which the discharged affects are expressed as symptoms of the body (Meissner, 2006). The relationship between emotion regulation and psychosomatic symptoms, in this study, will be investigated based on attachment theory (Fonagy, Gergely, Jurist & Target, 2002; Gubb, 2013) and theory of affect dysregulation (Taylor, 2003). Moreover, based on parental affective regulation and modeling (Stuart & Noyes, 1999), parental health may be

another factor that may play a role for the children to develop a tendency for psychosomatic symptoms. Familial and emotional factors that may have a relation with psychosomatic symptoms will be the focus of investigation in this study.

1. Emotion and Emotion Regulation

1.1. Theories of Emotion

Emotion is a word that is commonly used both in psychology literature and in everyday life. The textbook definition of an emotion is "pattern of action elicited by an external event and a feeling state, accompanied by a characteristic physiological response" (Durand &Barlow, 2010, p.59).

Freud with his psychosexual theory was the first figure in psychology who was influenced by Darwin's theory of evolution and who wrote about emotion and emotion regulation (Taylor, Bagby, & Parker, 1991). Freud's emphasis was on unconscious forces and impulses. Freud believed that emotions or affects originated from drives (Freud, 1915). Dodge and Garber (1991) considered Freud's (1926) psychosexual theory as a theory of emotion regulation because it was based on the person's conflict between his or her own internal drives and his or her own attempt to regulate the expression of those drives according to the external stimuli. Freud mentioned the use of defense mechanisms as means to regulate the affective experiences (McWilliams, 1994). If a person fails to use defense

mechanisms properly, like the person cannot repress an unwanted wish, the person feels anxious which may in turn lead to psychopathology.

After Freud, there were lots of debates about emotion regulation and the definition of emotion. According to Dodge and Garber (1991), there is an ongoing debate between two perspectives: Emotions are either the expressed product of neurological activity or emotions are expressed and regulated through cognitive, behavioral and neurological processes.

Two perspectives were presented on this debate. The first one can be considered as a reductionist one because of reducing emotions to one domain. The second perspective is more comprehensive by considering cognitive and behavioral processes together with neurophysiological processes while operationalizing emotions. Dodge and Garber (1991) were one of the opponents of the second perspective. Their conceptualization of emotion and emotion regulation has a clinical implication and it is used in clinical field by Cole, Michel and Teti (1994).

According to this second perspective, every emotion involves three separate but interrelated systems and processes (Dodge & Garber, 1991). The first one is neurophysiological process which involves autonomic nervous system and neurological process. This is the physiology and biological component. The second one is behavioral-expressive process which involves facial expression, like crying when a person feels sad. This is the behavior component. The third one is cognitive and experiential process which involves being aware of an emotional state, or verbal

expression of a sense. This is the cognitive component. This model shows that emotional processes are multifaceted.

Emotion has a functional role in cognitive, behavioral, physiological and social spheres to organize (Cole, Michel & Teti, 1994). Based on this organizing function, Cole, Michel and Teti (1994) assert that every emotion serves a function for regulation of other domains like interpersonal domain. For instance, the function of anger is to continue to provide the ability to move forward in face of adversity as well as bringing justice (Boratav, Sunar, & Ataca, 2011). The function of sadness is to let go of loved ones and redirect the effort to take care of others (Cole, Michel & Teti, 1994). In those examples, emotions regulate the experience. In addition, emotion is also regulated by other domains. Based on the environmental conditions, the expression of an emotion may vary. For example, when an infant tries to touch an electricity socket, the caregiver shouts at the infant. As a result, the infant immediately pulls the finger away. Cole et al. (1994) regards emotions as "regulatory and regulated" by itself. It means that emotions may regulate a person's experience, like giving a meaning to an experience. If a person broke up a loved one, the person feels sad and the experience of sadness gives a meaning to breaking up. Emotions also may be regulated by the environment, as in the example of the caregiver-infant relationship.

1.2 Emotion Regulation

Emotion regulation is the constant process of organizing between the person's emotional patterns and its relation to environmental conditions

(Cole et al, 1994). More specifically, emotion regulation is the interaction of cognitive, behavioral and physiological systems. Dodge (1989 cited in Dodge & Garber, 1991, p.5-6) defined emotion regulation as "the process by which activation in one response domain serves or alter, titrate or modulate activation in another response domain". Dodge and Garber (1991) discuss two faces of emotion regulation. The first one is *intradomain* emotion regulation which is adaptation of the response of activation in one *domain.* For example, when a person feels anxious, his or her heart starts to beat faster. If this person can breathe deeply and slowly, his or her heart beat will turn back to normal and the level of anxiety will decrease.

The second domain is the interpersonal emotion regulation (Dodge & Garber, 1991). Interpersonal emotion regulation involves the regulation of the emotional expression based on environmental demands. The person's interaction with social relationship and the quality of those relationships and environmental constitute the interpersonal regulation of an emotion (Taylor, Bagby & Parker, 1997).

Because of the complexity of emotional processes, three different but related terms refer to sensual processes: feeling, emotion and affect. They are sometimes used interchangeably. Taylor, Bagby and Parker (1997) clarified the distinction among those terms. Feeling stands for one of three interrelated processes that are mentioned above which is cognitive-experiential part of an emotional state together with a subjective experience; whereas emotion stands for two of the three interrelated-processes, namely neurophysiological and behavioral processes. Affects are more complicated.

The textbook definition of an affect is “Conscious, subjective aspect of an emotion that accompanies an action at a given time” (Durand & Barlow, 2010, p.59). Affect involves not only all of those three processes as neurophysiological, behavioral and cognitive-experiential systems but also mental representations and memories of that emotional state (Taylor et al., 1997). Thus, affect refers to both biological, behavioral and cognitive aspect as well as the subjective aspect of that feeling.

1.3. Affect regulation

Affect refers to the specific emotion itself and the expression and experience of that emotion. Affect includes the subjective domain and personal attributes to emotion. Affect regulation is the attempt to organize and influence the kind of the emotion and the process of expression as decreasing the intensity and experience of that emotional experience (Taylor et al., 1997). Affect regulation can be considered as a process which includes the interaction of neurophysiological, behavioral-expressive and cognitive-experiential systems as well as subjective meaning.

The interpersonal domain of emotion regulation as mentioned above has a role also in affect regulation. The person’s interaction with social context and the kind of the relationship and environmental aspects such as being at home or at work constitute the interpersonal regulation of an emotion (Boratav et al., 2011; Taylor et al., 1997,). The subjective aspect of the emotion, which is the person’s unique way of living the experience, has

a role regarding affects. For example, dreams, fantasies, daydreams, social bonds may regulate an emotion (Taylor et al., 1997).

1.4 Emotion Dysregulation

Intradomain and interpersonal domains of emotion regulation are considered as two processes in emotion regulation. Moreover, emotion regulation and affect regulation are also developmental processes (Dodge & Garber, 1991). For the infant, the caregiver is the provider of the emotion regulation system. The function of this caregiving relationship is the transfer of emotion regulation from the caregiver to the infant (Dodge & Garber, 1991; Fonagy et al., 2002). Thus, the infant will be able to regulate his or her own emotions and affects by himself or herself. The development of affect and emotions is based on a process in which emotions are experienced first in the body and then, with the development of language, the children can mentally represent emotions and affects (Taylor et al., 1997). During the development, the expression of emotion and affect undergoes a process of desomatization so that they can mentally be represented. It means that, by the use of language, the child can experience his or her emotion in his or her mind, rather than on the body. The use of language, through the caregiver's regulation, makes desomatization process possible.

Based on this developmental perspective, emotion dysregulation was considered as a failure in the acquisition of the appropriate developmental tasks of emotion regulation and those failures are considered to be the core

of psychopathology (Cole et al., 1994; Dodge & Garber,1991; Taylor et al.).

In terms of clinical psychology, almost all therapeutic models and perspectives aim to regulate emotional and affective difficulties (Cole et al., 1994). In DSM-IV, multitude of disorders was described with their reference to difficulties regarding emotion regulation: Major depressive disorder and bipolar disorder were considered as mood disorders, and phobias, obsessive-compulsive disorder were considered as anxiety disorders (APA, 2000).

Regarding emotion dysregulation, there is a difference between emotion dysregulation and absence of regulation: Emotion dysregulation is used to refer a dysfunction in normal emotion regulation processes so that either impairment or a restriction of function exists (Cole et al, 1994). It is not an absence of regulation. Zeman, Shipman, and Penza-Clyve (2001) defined two forms of emotion dysregulation as over-regulation and under-regulation of emotional expression, even though it would limit the spectrum of emotion-dysregulation.

1.5. Emotion Management

Zeman, Shipman, Penza-Clyve (2001) first put forth the idea of self-management of emotion which is an individual's capacity to direct one's emotional expression. By definition, emotion regulation in itself involves the concept of self-management. Zeman et al. (2001) and Cole et al. (1994)

both mentioned that the under-regulation and over-regulation of emotional expression.

Cole et al. (1994) and Zeman et al. (2001) asserted that the intensity and the amount of expressed emotion have to be considered to evaluate under-regulation or over-regulation. Under-regulation takes the form of high intensity for the experienced emotion state and/or a high amount of expressed affect. For example, an angry person may scream or hit to express his or her anger. *Emotion dysregulation* was used to refer to *under-control* of emotional expression (Zeman et al., 2001). Over-regulation takes the form of low intensity for the experienced emotion state and low amount of expressed affect. When a person overregulates one's emotional state, the person may feel high levels of internal stress, but the person is able to mask the feeling state to the environment (Cole et al., 1994). The internal stress is kept inside. The term *inhibition* was used to refer *over-control* of emotional expression (Zeman et al.,2001).

Coping successfully with negative emotions was another skill for competent emotion management. Emotion regulation coping is being able to direct emotional experience regarding the intensity, amount of expressed emotion and the duration of the expression (Zeman et al., 2001). It is the ability to competently regulate and manage one's emotional state by oneself. Coping, here, is linked with the ability to control one's emotional expression. The difficulties in coping and the experience of dysregulation are generally related to psychological difficulties.

It is also worth to mention that regulation also includes interaction with others and the surrounding environment. Emotion regulation is not exclusively internal. The social context may also have an influence.

1.6 Alexithymia

Alexithymia as a term is first used by Sifneos (1970 cited in Taylor et al., 1990). The term alexithymia is used to describe affective disturbances which are difficulties in (1) identification and description of emotions; (2) discriminating between feelings and the sensations of the body; (3) restriction of imaginative processes; and (4) an externally oriented cognitive style (Taylor et al., 1991). Alexithymia is considered to be a factor that may damage health by increasing general susceptibility to form psychosomatic symptoms (Taylor et al., 1991).

Alexithymia is considered as a dimensional construct and a personality factor which is normally distributed, rather than a categorical construct or a disease (Bagby & Taylor, 1997). Alexithymic individuals have difficulty in processing emotions. They cannot experience their emotions as conscious feeling states; rather, they experience emotions as external things (Taylor et al., 1991). This inability of emotion processing has a cognitive component which involves in emotion regulation process. For example, a person who is high on alexithymia may feel depressed or anxious and may verbalize it. However, what he or she describes for anxiety is “nervousness, agitation, irritability, and tension” and what he or she describes for depression is feelings of “emptiness, boredom, void and pain”

(Bagby & Taylor, 1997). What is missing from their accounts is their own experience of that feeling and the mental representation of that feeling. The person cannot actually describe the feeling state, he or she talks about the feeling like he or she talks about something external.

The kind of the cognitive processing of the emotion is more apparent in dreams of alexithymic individuals. They can recall the dreams but what distinguishes alexithymia is the quality of the dream content that the dreams lack symbolization, condensation and displacement (Bagby & Taylor, 1997).

Cognitive difficulties of alexithymia lead those individuals to have difficulties in the cognitive-experiential domain of emotion regulation and the interpersonal domain of emotion regulation (Bagby & Taylor, 1997). They conceptualize emotions on a more primitive level and in a more concrete way. They are limited in mental imagination. In the cognitive-experiential domain of emotion regulation, they cannot process their own emotion because they cannot identify and describe their experiences and they cannot distinguish one emotion from another. Secondly, because they cannot process their emotions, they have difficulties regarding interpersonal relations. They cannot empathize with another person, because they don't even know what is going on in them. They cannot regulate other's emotional states as well (Bagby & Taylor, 1997).

Moreover, the failure shows itself in behavioral-motor domain of emotion regulation as well. Clinical observations show that alexithymic

individuals showed restriction in gestures, in facial expression and in recognition of facial expression of others (Bagby & Taylor, 1997).

Their difficulties in cognitive-experiential domain of emotion regulation, behavioral-motor domain of emotion regulation and interpersonal emotion regulation show that they have difficulties regarding emotion regulation, in general. Their experience of emotion regulation puts them at risk for psychosomatic problems and psychosomatic disorders. The limitation in cognitive processing and subjective awareness of emotions may play a role for individuals who have been diagnosed with hypochondriasis and somatization disorder (Bagby & Taylor 1997). As those individuals' capacity for cognitive processing and subjective awareness of emotions is limited, they can first misinterpret the physical sensations of the emotion regulation and then may focus on just the physical sensation part. Their inability to use cognitive processing to modulate emotions leads them to experience unpleasant emotional states so they may use compulsive actions like substance use to reduce those unpleasant feelings (Bagby & Taylor, 1997). Thus, the difficulty in modulation of emotions in alexithymia leads the person not only to concentrate on and increase somatic sensations associated with emotional arousal but also to perceive physical actions as an instant reaction to an unpleasant arousal (Taylor et al., 1991). This process is considered to play a part in the formation of psychosomatic symptoms. Alexithymia is harmful for health because of the inability to regulate distressing emotions.

Studies that were done in Turkey with alexithymia showed that high levels of alexithymia were found to be normally distributed in the population. However, studies showed that individuals who had been diagnosed with post-traumatic stress disorder and migraine (Karşıkaya, Kavakçı, Kuğu, & Güler, 2013), fibromyalgia (Güleç, Sayar, Topbaş & Karkucak, Kaya, Erden, Kayar, & Kıralp, 2010), depression and anxiety (Motan & Gençöz, 2007), and with individuals who have chest pain without a cardiologic reason (Güleç, Hocaoğlu, Gökçe, & Sayar, 2007) showed higher levels of alexithymia. Those studies also pointed out that higher level of alexithymia is more common for individuals who have a tendency for psychosomatic symptoms.

Motan and Gençöz (2007) investigated the relationship among alexithymia, depression and anxiety. They found a difference on dimensions of alexithymia regarding anxiety and depression. Their findings showed that high levels of depression were associated with high levels of difficulty in communication feelings; whereas high levels of anxiety were associated with high levels of difficulty in identification and description of feelings and low levels of difficulty in communication feelings (Motan, & Gençöz, 2007). Those findings pointed out that individuals who were depressed may have difficulty to identify and describe emotions. Individuals who were anxious however, have difficulty to communicate their feelings. They may fail to verbally express what they feel.

Alexithymia, as a concept of difficulty in emotion regulation in terms of restriction of identification and expression, seems to increase a

person's likelihood to develop psychosomatic symptoms due to their difficulties in emotion regulation. Those individuals have limited capacities to regulate their own emotions. Even though they feel those emotions, they do not have words to describe it. When they cannot verbalize their emotions, they may somatize.

2. Psychosomatic Symptoms

The concept of psychosomatic originates from the relationship between the mind and the body. It refers to experiencing psychological experiences as physical, in the body. The mind and the body are in relation with each and that there is a continuum between the two. Every individual has his or her own place within mind and body spectrum regarding their physical and psychological well-being (Meissner, 2006).

Conversion, somatization and psychosomatic are terms that are widely used in psychology literature to refer the symptoms expressed on the body. Freud differentiated between conversion and actual neuroses as different origins of physical symptoms. Conversions are symbolic and originate from internal conflicts; whereas psychosomatic symptoms neither originate from traumas nor have symbolic meanings (Gubb, 2013). In psychosomatic processes, there is tissue damage whereas in conversion, the tissue damage does not exist (İkiz, 2012). Now, it is considered that almost every disease has psychological factors involved whether it is biologically validated or not (İkiz, 2012).

As mentioned above, conversions seem to have a symbolic meaning while they do not lead to any tissue damage, whereas psychosomatic symptoms lead to tissue damage while they do not have a symbolic meaning. Here, it is important to also mention somatization and the use of somatization and psychosomatic. Somatization is used more widely in psychiatry while psychosomatic is used more in psychology. Somatization Disorder and Conversion Disorder, together with Hypochondriasis, Pain Disorder and Body Dismorphic Disorder are considered Somatoform Disorders in DSM-IV (APA, 2000). For a person to be diagnosed with Somatization Disorder, the person has to have these symptoms: At least four pain symptoms in different parts of the body, two gastro-intestinal symptoms, one sexual dysfunction symptom, and one pseudoneurological symptom like a local paralysis and an obvious medical explanation should not exist (APA, 2000). For a person to be diagnosed with Conversion Disorder the person has deficits in voluntary motor or sensory nervous systems together with psychological difficulties and those deficits should not be able to be explained by an obvious medical diagnosis (APA, 2000).

Conversion and somatization were also referred as defense mechanisms in the psychoanalytic literature. McDougall (1974) refers to conversion as the process in which the mind uses the body and bodily functions to explain what is happening in the mind, so that the symptom has a meaning in itself; whereas, in somatization, the body is the origin of the symptom so that the symptoms occur on the physical level, rather than on the psychological level. The body speaks for the mind. There seems to be a

link between psychological stress and the appearance of the somatic symptom.

While somatization is used as a psychiatric diagnosis, psychosomatic is used to include more physical symptoms. In DSM-IV, somatization is used as a categorical disorder, whereas the term psychosomatic is used to cover somatization disorder, pain disorder, hypochondriasis and medical diseases that are considered to be of psychologically origin like migraine (Taylor, 2003).

The classification of psychosomatic disorders differs from the DSM approach. In DSM-IV, the word "psychosomatic" does not exist. In medical literature, psychosomatic disorders are organized based on the organ in which the tissue damage exists (Karslı, 2008):

1. Dermatological diseases: Urticaria, eczema, psoriasis.
2. Musculoskeletal system diseases: Pain in joints, rheumatoid arthritis, spasmodic torticollis.
3. Respiratory system diseases: Hyperventilation syndrome, bronchial asthma, allergic rhinitis.
4. Cardiovascular system diseases: Coronary heart disease, migraine, essential hypertension.
5. Gastrointestinal system diseases: Ulcerative colitis, ulcer, gastric ulcer, cardiospasmus, dyspepsia, spastic colon (irritable bowel syndrome)
6. Endocrine system diseases: Diabetes mellitus, disorders of thyroid
7. Reproduction and Urinary system diseases: Disorders of menstruation, sexual dysfunctions, pseudopregnancy, enuresis, encopresis, infertility,

8. Sensory organ and other system diseases: Atrophicae rhinitis, allergic reactions, tics.

2. 1. Early Psychoanalytical Perspectives on Psychosomatic Symptoms

2. 1. 1. Freud's View

Freud, together with Breuer, thoroughly studied hysteria and conversion. Freud (1894) asserted that the ideas that are incongruent with one's morality are repressed. The libidinal energy that is connected to these inappropriate ideas will be withdrawn to maintain the repression. What happens to this energy is to convert this energy into somatic sensations and those somatic sensations are called conversion (Taylor, 2003). Those conversion symptoms appear in motor voluntary and/or sensory systems and they convey a symbolic meaning about the unconscious wish and the defense mechanism of this wish (Taylor, 2003).

Freud conceptualizes three possible ways of affect transformations: Conversion hysteria, obsessional neurosis and actual neuroses (Gubb, 2013). He differentiates the origins of physical symptoms: Actual neuroses which are reactions to libidinal frustration in everyday life occur as a result of a physical stimulation, have somatic origin and do not have any access to the mind; whereas conversions are the physical manifestations of internal conflicts that are repressed and left out of the mind (Gubb, 2013; İkiz, 2012). Conversions are symbolic and internal conflicts were the source of

conversions; whereas psychosomatic symptoms do not originate from a trauma and it does not have a symbolic meaning. Freud considers psychosomatic symptoms as defense mechanisms, even though he never used that word.

2.1.2. Franz Alexander's Specificity Hypothesis

Franz Alexander (1950) in his works on psychosomatic symptoms studied specific factors of personality that affect the formation of psychosomatic symptoms. In his view, specific personality factors dispose an individual toward specific psychosomatic disorders in particular organs (Alexander as cited in Karslı, 2008). Alexander refers to seven disorders as psychosomatic and those disorders are known as the "Chicago Seven": Bronchial asthma, gastric ulcer, essential hypertension, rheumatoid arthritis, ulcerative colitis, neurodermatitis, thyrotoxicosis. Those symptoms are considered to have an underlying meaning and people who have those disorders are predicted to differ in their personality characteristics (McDougall, 1989).

2.2. Contemporary Perspectives

In this section, regarding the theories on psychosomatic symptoms, three approaches will be discussed. Karen Gubb (2013), in her review paper about the theory and the practice of psychosomatic symptoms, discussed about Paris School of Psychosomatics and Attachment School perspectives. Also, Taylor's view on affect dysregulation will be discussed.

2.2.1. Paris School of Psychosomatics (IPSO)

Paris School of Psychosomatics is one of the most prominent perspectives among psychoanalysts. Pierre Marty, Michel Fain, Michel de M'Uzan and Christian David are the prominent figures. Their approach is based on Freud's drive theory and economy principle and it is an extension of Freud's actual neurosis concept (Gubb, 2013; İkiz, 2012).

As mentioned above, Freud conceptualizes three possible types of emotion transformations: Conversion hysteria, obsessional neurosis and actual neuroses (Gubb, 2013). The Paris School focuses on early relations between the infant and the caregiver and the function of the infant-caregiver relationship on the formation of mental representations through drive discharge (Marty, 1998). The infant looks for a caregiver to be able to complete drive discharge which was initiated by physical stimulations. Those physical excitations may form psychic representations if they can be transformed to drives through caregiver relationship. However, there is a chance that those physical excitations cannot transform to drives. In that case, they cannot be mentally represented. Those physical excitations will rest in the body, without a psychic representation. This was the process for the formation of psychosomatic symptoms, according to Paris School. This state was defined as "Acting rather than thinking" (Gubb, 2013, p. 13).

The Paris School conceptualizes the relationship between mental representations and psychosomatic processes through mentalization (Marty, 1998). Mentalization is about the quality and quantity of a person's mental representations (daydreams, associations, and dreams) and it is the minds'

ability to interpret and respond to physical stimulations (Marty, 1998). Paris School differentiates between psychosomatic processes based on the level of mentalization.

In psychoanalytic literature, three levels of the development of personality organization were used to make a psychoanalytic diagnosis. Those three levels of the development of personality organization are neurotic level, borderline level and psychotic level (McWilliams, 2004). Here, neurotic, borderline and psychotic were not used as in DSM-IV. Those three levels were characterized by the absence or presence of identity integration, maturity of defenses and reality testing (McWilliams, 2004). If the person's identity was integrated, if the person uses higher order or secondary defense mechanisms and if the person's reality testing is intact, this person's level of development of the personality organization is neurotic. If the person's identity was not integrated and if the person uses primary defense mechanism while his or her reality testing was intact, this person's level of development of personality organization is borderline. If the person's identity was not integrated and if the person uses primary defense mechanism while his or her reality testing was not intact, this person's level of development of personality organization is psychotic. Paris School uses those three classifications of personality structure for psychosomatics.

Those who can mentally represent their physical excitations are the ones in the neurotic spectrum; whereas those who cannot mentally represent

their physical excitations are the ones in the borderline and psychotic spectrum (Gubb, 2013; Marty, 1998).

For the neurotic level of development, psychosomatic processes occur through regression: When a person experiences a dysregulation of his or her mental organization due to the difficulties or crises in his or her life; the ego starts having difficulties functioning properly which leads to regression to an early stage in which the person experiences libidinal overcathexis of bodily functioning (Gubb, 2013). This is a temporal dysregulation. For borderline and psychotic level of development, the drives become unattached and those unattached drives lead to progressive health problems which include life-threatening diseases like auto-immune diseases (Gubb, 2013). What determines whether the type of the somatization processes is either progressive or temporal is the level of mentalization.

The Paris Schools refers to concrete thinking style for psychosomatic processes (Gubb, 2013; İkiz, 2012). Emotions, rather than internal mental states, are like external for people who experience psychosomatic processes. The Paris School refers to this kind of thinking as operational thinking in which associations are limited, concrete thinking is dominant, and the thinking process is isolated from affective states (İkiz, 2012). Operational thinking is the basis for alexithymia which is a difficulty in describing, identifying and distinguishing among different emotions (Gubb, 2013; Taylor, 2003). The Paris School talks about essential depression in which there is a libidinal loss characterized by no emotions and a lack of desire (Marty, 1998).

According to The Paris School, the problems in mentalization lead to psychosomatic symptom formation, where the mind becomes a "speechless mind": In this condition, the mind cannot operate due to the fact that the representations are not well-developed (Gubb, 2013).

Paris School of Psychosomatic perspective has its place in psychoanalytic literature. It is based on Freudian drive theory, so, it is hard to investigate this theory with an empirical study. This theory was mentioned because of its significance in the literature. The scope of this dissertation will not cover this theory.

2.2.2 Attachment Perspective

The second contemporary psychoanalytical approach that is based on early attachment processes is called "The Attachment approach" by Karen Gubb (2013). The prominent figures of Attachment are Peter Fonagy, Mary Target, and Antony Bateman. Along with the Paris School, the Attachment approach also looks at the underlying psychological factors regarding the physical symptoms. For this paper, the purpose to include Attachment approach is because of their conceptualization of affect regulation function of infant-mother dyad and its relationship with psychosomatic symptoms.

The Attachment approach focuses on early relationships as well. Rather than focusing on drives, the economic principle, and unpleasant experiences, they focus on the intersubjective sphere between the mother and the child during the attachment period, mentalization process and the individuation-separation process (Bateman, & Fonagy, 2006; Gubb, 2013).

The function of the attachment is to provide the sense of security and intimacy for the child (Fonagy, Gergely, Jurist & Target, 2012). The caregiver should regulate and mirror the child's motor and affective experiences (Fonagy et al., 2002). When the child is able to form secure attachment with his or her caregiver, he or she experiences pleasure and feels like he or she is in physical harmony with his or her caregiver. Secure attachment is needed for the development of mentalization: Through secure attachment the child can mentalize both his or her body and his or her affective states (Bateman & Fonagy, 1996; Fonagy et al., 2002; Gubb, 2013).

Mentalization is a person's mental ability to perceive and interpret the behaviors, affects and the mental states of others (Fonagy et al., 2002; Bateman & Fonagy, 1996). Psychosomatic processes are related to problems in early relationships with the caregiver during the formation of mentalization: If the caregiver cannot regulate the infant's experience and affective states; the child would not gain the ability to regulate his or her own affective states. During the development, when the caregiver can contain and mirror the infant's affective experiences, the infant may interpret his or her emotions and experiences. It is a developmental state which provides the infant to transform and represent physical excitation as psychological. When there is a problem during this stage, the mind cannot think and symbolize so that the body takes over the mind's job (Fonagy et al., 2002; Gubb, 2013). Thus, attachment approach conceptualizes

psychosomatic processes as “speaking body”: Body takes the charge of the mind when the mind cannot mentalize (Gubb, 2013).

2. 2. 2. 1. Attachment, Modeling and Somatization

Stuart and Noyes (1999) discussed further the relationship between attachment and modeling and somatization. They pointed out that adverse childhood experiences may increase a person’s likelihood to develop psychosomatic symptoms. For a child, exposure to a parent who was ill or exposure to traumatic events may increase his or her likelihood to develop psychosomatic symptoms (Stuart & Noyes, 1999). If the child was exposed to a parent who had a chronic illness, the child would also be exposed to a role model who had medical problems. Those kinds of negative experiences during childhood may have a negative impact on not only the formation of affect regulation through attachment but also modeling which may lead the child to model an ill person.

Stuart and Noyes (1999) pointed that childhood illness may be one of the precipitating factors regarding somatization behavior. They pointed out that adults who were diagnosed with somatization disorders reported that they had a history of childhood illness. Childhood illness may have an impact on somatization through parenting; because children were likely to mirror their parents’ reaction to their physical condition. If the parents showed “conditional caring” which means that the parent cares the child more when the child got sick than the child was healthy, the parents’ response may reinforce the illness behavior. Also, inadequate parental care

during childhood may have an impact on somatization behavior: If the parent did not take enough care of the child, the child may try to attract attention by being ill (Stuart & Noyes, 1999).

Not only childhood illness, but also parental illness may play a role for the child to develop psychosomatic symptoms. Children may socially learn or model illness behavior from their parents who were ill (Stuart & Noyes, 1999). If a child was exposed to a parent who had a chronic illness during early days of his or her life, they child may adopt the behavior that he or she observed from the parent.

Craig, Boardman, Mills, Daly-Jones, and Drake (1993) conducted a longitudinal study by comparing two groups. The first group was composed of individuals who applied to a primary care health service with the presence of physical symptoms together with an emotional disorder. The second group was composed of individuals who applied to a primary care health service with the presence of physical symptoms only. They called the first group as "somatizers" and they defined the group as those who had physical symptoms that were not related to an organic disease together with an emotional disorder (Craig et al., 1993). They investigated somatizers and they found that, for adult somatizers, inadequate parental care and the existence of childhood illness were found to be significant regarding their early years of life (Craig et al., 1993; Stuart & Jones, 1999).

2.2.3 Affect Regulation/Dysregulation Perspective

The third approach is Affect Regulation/Dysregulation perspective, which can be considered as an enlargement of the Attachment approach, which is based on the relationship between affect regulation and psychosomatic symptoms. The basis of this approach is based on Attachment Approach, as discussed above. Taylor (2003) mentioned it as a Contemporary Psychoanalytic Perspective and it is based on Schur's (1955), Krystal's (1974, 1988), Fonagy's (2002), Bucci's (1997) and Taylor's (1997) perspectives on psychosomatic symptoms.

During the development, the infant passes differentiation, desomatization and verbalization phases: At the beginning, the infant experiences emotions on sensorimotor level; but, while development continues, the infant attains the psychological component of those emotions (Schur, 1955; Taylor, 2003). This psychological component is gained by mental representations. Emotions are the biological roots of feelings: When a cognitive-experiential aspect accompanies emotions, it becomes a feeling (Krystal, 1974; 1978; Taylor, 2003). The function of feelings is to enable humans to recognize the experience of an emotion, beyond the biological level. If a person is unaware of his or her experiences of feeling, then his or her emotions will confuse the person about the experience, where those feelings will be experienced on the somatic level without a psychological meaning (Taylor, 2003).

Infancy is the period when the emotion schemas develop in *nonverbal* form. This nonverbal form involves two processes: The

subsymbolic process in which the experiences of sensory, visceral and kinesthetic sensations form emotional arousal and the *symbolic imagery* process in which emotion is linked with the person like the caregiver or with the object like a teddy bear (Bucci, 1997; Taylor, 2003). *Verbal* processes are included into emotion schemas when the child starts to talk (Taylor, 2003). Two different but progressive forms of emotion representation and emotion schemas exist: Subsymbolic form or verbal form. Those two forms differ with respect to their underlying processing mechanisms.

The verbal processing is based on rules of logic and it works on sequences (Bucci, 1997; Taylor, 2003). The organization of the verbal system is based on the hierarchy of categories to enhance abstract and general processing of the emotions (Bucci, 1997; Taylor, 2003). The subsymbolic system differs in terms of processing. The subsymbolic processing is based on multiple parallel and similar patterns which are perceived as alternates of continuous aspects (Bucci, 1997; Taylor, 2003). The connection between subsymbolic form and verbal form is based on the *referential connections* between them: These referential connections bond different components of emotional schemas to allow the transition of the meanings of emotional representations (Bucci, 1997; Taylor, 2003). For example, an emotion schema in the nonverbal system can be represented in verbal form and can be spoken.

During the development, the infant incorporate motor, visceral and sensory components of an emotion schema into images and words (Bucci, 1997; Taylor, 2003). The caregiver's attunement and emotion regulation

abilities are crucial during this development. The caregiver regulates the infant's emotional states and transforms those emotional states to verbal feelings. This transformation enables the infant to be able to verbally communicate with others and to mentally represent his or her feelings (Taylor, 2003). It is also in line with Fonagy's conceptualization. Fonagy et al. (2002) also mentioned the importance of affective regulation during the attachment period.

Overall, developmental difficulties regarding emotion regulations lead emotions to be experienced with few words and few images and to be inadequately differentiated from somatic and motor sensations (Krystal, 1997; Taylor, 2003). Therefore, the emotions are experienced heavily in the body, in the soma rather than on the mind. It can be said that, the dysregulation of emotion regulation system occurs as the biological component deregulated cognitive-experiential component on Dodge and Garber's (1991) model. This kind of experience of an emotion on the somatic level may lead a person to experience alexithymia and develop a tendency to have psychosomatic symptoms.

Somatization, or psychosomatic symptom which was used as an equivalent for Bucci (1997), occurs when the subsymbolic representations are poorly related with symbolic representations in which subsymbolic representations and symbolic representations become dissociated (Taylor, 2003). When emotional representations were dissociated, an individual may experience emotions as physical experiences while he or she cannot recognize psychological meaning. A similar pattern may also be applied to

alexithymia. Alexithymia does not only encompass the difficulty in naming the emotions but also the experience of verbal and nonverbal symbols for the somatic sensations (Bucci, 1997; Taylor, 2003).

2.3. Epidemiology of Psychosomatic Symptoms

The incidence of psychosomatic symptoms is very hard to establish since it is an inclusive term. It includes many disorders since it is generally considered that almost every disorder, except the ones that occur as a direct result of a pathogen, involves a psychological factor (İkiz, 2002).

The prevalence of the diagnosis of somatization disorder is 0.2% to 2 % for females and 0.2% for males (APA, 2000). Based on these statistics, it should be noted that it is more common in females than males.

Somatization disorder is a categorical diagnosis in DSM-IV. Somatization disorder is rare because to diagnose a person with somatization disorder, the person needs to have at least eight symptoms. Regarding sub-threshold symptom prevalence, the prevalence of psychosomatic symptoms is far more common. When considering fewer numbers of symptoms, like four, it is found that %16.6 percent of patients who apply to a primary care setting have psychosomatic complaints (Durand & Barlow, 2010). According to Swartz et al. (1990 cited in Dülgerler, 2000), the percentage of psychosomatic complaints observed during medical appointments is between 20% to 84 %.

Sağduyu (1995) conducted a research in a semi-rural area in Turkey with patients who apply to a primary health care center. He looked for the

number of somatic symptoms that are not related to an organic cause. The mean score of those somatic symptoms was 3.46 which meant that, in that population, a person tended to have at least three somatic symptoms that were not validated biologically. Thus, those symptoms could be classified as psychosomatic. Among those symptoms, the most reported complaint was headaches (%24).

3. The relationship between demographic factors and psychosomatic symptoms

Gender difference seems to play a role regarding psychosomatic symptoms. Females are more prone to report psychosomatic symptoms than males. Sağduyu (1995) found that females who applied primary care health center tended to complain more about psychosomatic symptoms.

Tamada (2005) conducted a survey to investigate sex difference regarding the prevalence of psychosomatic symptoms in Japan and she found that between 1989 and 1997, the number of male patients who had psychosomatic symptoms did not change, whereas the number of female patients who had psychosomatic complaints increased 1.5 times. The ratio of psychosomatic symptoms for females and males grew from 1.31 % to 1.92 %. Based on this finding, it can be said that the likelihood of developing psychosomatic symptoms for females is two times higher than males. Psychosomatic disorders in which the proportion of females is higher than males are as follows: Eating disorders, collagen disease,

hyperventilation syndrome, rheumatism and headaches; whereas stomach problems were found more common in males in Japan (Tamada, 2005).

Based on the studies conducted on health practices, it was found that college students gain weight and generally have a life in which they rarely practice healthy behaviors and during this period, their likelihood of developing psychosomatic symptoms increases (Ansari, Labeeb, Moseley, Kotb, & El-Houfy, 2012). The reason may be that college is a life changing period and this kind of a change may increase health problems. Vaez, Kristenson, and Laflamme (2004) conducted a cross-sectional research with freshman students and their same-age peers who work at that time. They looked for the quality of self-rated health status between those two groups. They pointed out that university students generally suffer from health problems more than their peers who work and also university students' level of quality of life is lower than their peers who work. Moreover, university student's rate for health seeking behavior is also lower than their peers who work.

General health status of college students was also examined. Ansari, Labeeb, Moseley, Kotb, and El-Houfy (2012) examined undergraduate students' perception of their health, and physical and psychological well-being. They found that female students consider themselves healthier than male peers; however, female students also have more psychosomatic symptoms and feel more overwhelmed (Ansari et al., 2012). Those students reported fatigue as the most common symptom. In Egypt, even though the students reported that their health situation was good, they had more

psychosomatic symptoms than in Western countries. (Ansari et al., 2012). It may point a cultural factor. It is possible that in collectivistic and individualistic cultures, individuals may express their emotion differently. Somatization as a way of expressing emotion may have a role in different cultures.

Besides the gender difference, socio-economic status seems to have an impact on psychosomatic symptoms. Huuerre, Rahkonen, Konulainede and Aro (2004) conducted a longitudinal study in which they measured psychosomatic symptoms of youth at the ages of 16, 22 and 32 in Finland. They found that females reported more psychosomatic symptoms. Moreover, it was found that people from lower socio-economic status tended to have more symptoms and people who had more symptoms tended to be in lower socio economic status (Huuerre, Rahkonen, Komulainen, & Aro, 2004). Here, low socio-economic status seems to be an underlying factor regarding psychosomatic symptoms.

Moreover, Warren (2009) conducted several analyses on a data from The Wisconsion Lontgitudinal Study in which participant's health status was measured at 18, 25, 36, 54 and 65 years old. They also found that lower socio-economic status had a negative effect on health problems: When the socio-economic status becomes lower, heath problems increase.

Schreier and Chen (2013) looked for the relationship between low socio-economic status and two psychosomatic symptoms, asthma and obesity with adolescents. They found that, socio-economic status interacts with other factors to influence psychosomatic symptoms.

A person's well-being is related to the interaction between the person and its environment: parents, school, and neighborhood (Schreier & Chen, 2013). Regarding parental factors, there is a reciprocal relationship between parents and child: Parents' psychological problems may influence the child as well as child's psychological problems may influence parents. For example, when the child has a mother who had physical complaints, the child is likely to develop physical complaints. Moreover, regarding socio-economic status, it is found that the relationship between poverty and the child's mental health is mediated through parenting (Schreier & Chen, 2013). Here, besides the actual socio-economic status, it seems that maternal depression and negative parenting like employing harsh rules for children increases negative outcomes of asthma and obesity for children.

What those studies pointed out in general that, regarding the demographic factors of psychosomatic symptoms, being female and having low socio-economic status tend to increase a person's likelihood to develop psychosomatic symptoms.

4. The relationship between the emotions and the psychosomatic symptoms

Besides the theoretical basis, evidence obtained from the empirical studies also reveals the relationship between the emotions and psychosomatic symptoms, specifically the connection between emotion regulation and psychosomatic problems. The link between emotion processes and health conditions has been investigated.

When Pandey and Choubey (2010) reviewed literature about emotion regulation and health, they found that the impact of emotion regulation on health depended on the emotion regulation strategy: If the emotions are regulated through the suppression or inhibition of expression it may increase health problems like psychosomatic symptoms; however, if emotions are regulated through cognitive restructuring or positive reappraisal, it may decrease the frequency of psychosomatic symptoms. Moreover, they found that the intensity of emotion has an impact on health as well: If the intensity and duration of emotion becomes higher, it will increase one's susceptibility to develop psychosomatic symptoms (Pandey & Choubey, 2010). Another factor is alexithymia that has been found to increase the propensity to develop psychosomatic symptoms.

Social sharing of emotions which is a mean to regulate emotions found to be beneficial for health (Pandey & Choubey, 2010). Pennebaker (2002) investigated the relationship between emotional disclosure and health. He pointed out that when a person talks about traumas, his or her blood pressure and skin conductance reduced and muscles relaxed. Verbal or written expression of emotions was found to be beneficial for health (Pennebaker, 1995).

Pennebaker, Glaser and Glaser (1988) conducted a study in which they randomly assigned healthy undergraduate students to two groups: One group was asked to write about personal traumatic events, the other group was asked to write about casual events for the following four days. They measured the participants' heart rate, skin conductance and blood pressure.

Moreover, they drew blood from the participants to measure their immune functioning. What they found was that the group whose wrote about traumas was better than the control group on health center use, immune system functioning, and subjective distress (Pennebaker et al., 1988). Those results showed not only the beneficial effects of writing about traumatic events or psychotherapy as a form of disclosure but also that inhibition of such experiences may lead psychosomatic disorders (Pennebaker et al., 1988). When the subjects can disclose, as opposed to inhibiting, their health conditions get better. This study shows the inhibition of emotions as a potential underlying factor in psychosomatic diseases and the connection between psychosomatic symptoms and emotion regulation strategies.

Pennebaker (1982) further investigated the psychological factors that influence the formation of physiological symptoms. He pointed out emotions become part of cognitive appraisal system involved in the psychology of physical symptoms together with the perception of the person (Pennebaker, 1982). There are similar points between his view and emotion regulation theories. Dodge and Garber (1991) consider emotion regulation as the regulation between neurophysiological processes, behavioral-expressive processes and cognitive and experiential processes. Pennebaker (1982) also talked about cognitive processing regarding the psychological factors of physical symptoms.

Pennebaker (1982) first asserts that fatigue, increase in heartbeat, upset stomach, headaches and those kinds of symptoms are not only common in healthy people but also in people who have been diagnosed with

somatization disorder and people who have been diagnosed with depression. So, those symptoms are widespread. People who report those physical symptoms actually feel them and they subjectively perceive an activation in their body (Pennebaker, 2000). So, what differentiates activation in the body from a physical symptom? It is the person's perception processes that involve attention and interpretation of a bodily sensation (Pennebaker, 1982; 2000).

Pennebaker (1982) suggests about selective monitoring as one of the mechanisms operating in perception of physical symptoms. A person looks at both the internal and external environment for relevant information. Because attention is limited, the person restricts the encoding of information and restructures the encoded ones by forming schemas to guide their thoughts, behaviors and emotions (Pennebaker, 1982). A person looks at the environment more for the relevant information with their schemas, rather than the irrelevant information, and tries to confirm them. So, the person uses selective attention, based on his or her schema, to process the environment. The same situation is true for physical symptoms. 70% of first year medical students reported symptoms of the diseases that they study (Pennebaker, 1982).

The attention given to information thus influences the way the person perceives the internal and external cues including for physical symptoms. As mentioned above, most people experience physical sensations: When a person selectively searches for an activation of the body and focuses on that activation, the person starts to perceive the symptoms

more than a person who do not give enough attention for the same kind of body activation.

Pennebaker, Skelton, Wogalter, and Rodgers (1979 cited in Pennebaker , 1982) conducted a series of experiments regarding attention to pain. They conducted a cold pressure test in the lab with undergraduate students: Each student was randomly assigned to hand condition group, face condition group or the control group (Pennebaker, 1982). In hand condition group, the participant immersed his or her hand in the ice water and saw the reflection of the immersed hand on a mirror which was placed behind the water bowl. In the face condition, the participant saw the reflection of his or her face on the mirror when he or she immersed his or her hand into the ice-water bowl. In the control condition, the mirror was not used. The participants in the hand group reported more pain symptoms than face group and control group.

Furthermore, they did a replication with another study using direct manipulation of attention: Since the experience or the expectation of a pain is related to an aversive sensation, the expectation of pain experience can be a schema that may influence the perception (Pennebaker, 1982).

In the second study, the participants were randomly assigned to four groups based on different attention processes: Attention group, dissociation group, distraction group and control group (Pennebaker, 1982). It was found that the onset of experience of pain differs significantly for the attention group and for the dissociation group. This finding implies that experience or expectation of pain may in fact influence the perception of pain

(Pennebaker, 1982). Thus, the way a person gives attention influenced the way the person feels the physical sensation as a symptom.

Emotions are part of the mental organization that was involved in psychology of physical sensations (Pennebaker, 1982). Cognitive, affective and behavioral aspects of an emotion were also involved. Considering behavioral processes, people use different facial expressions for different emotions. Also, different emotions evoke different kinds of autonomic and central nervous system activity: Feelings of anger and fear and feelings of pleasant and unpleasant kind differ in terms of the neurological activity (Pennebaker, 1982).

Separate emotions also seem to involve separate mechanisms. One emotion differs from other both on the physiological and motor levels (Pennebaker, 1982). This is also perceived in sensory level and its specificity is apparent in language use. For example, a person says I am mad when he or she feels anger; whereas I am losing contact with other when he or she feels sad and I am feel like I cannot breathe when he or she feels anxious.

Pennebaker (1982) and his team conducted correlational studies to look for the perceptual specificity for different emotions. The participants were given a checklist which was composed of 14 symptoms (headaches, watering eyes, racing heart, congested nose, tense muscles, upset stomach, flushed face, short breath, cold hands, warm hands, dizziness and lump in throat) and 7 emotions (happy, tense, angry, jealous, sad, guilty, unhealthy) and each participant answered on a scale from 1 to 7 based on the levels of

that emotion. For physical symptoms, the participants were asked to choose between "Right now, at this point, I am experiencing" and for emotion symptoms, the participants were asked to choose between "Right now, at this point, I am feeling" (Pennebaker, 1982; 1984). When correlational analysis between different symptoms and different emotions was done, it was found for most of the participants, an emotion was correlated with more than one symptom (Pennebaker, 1982; 1984).

Those studies pointed out the link between emotions and the tendency to develop psychosomatic symptoms. It was showed that the physical symptoms and physiological processes are closely in line with emotional processes. The expression of an internal sensation and the regulation of that emotion may have an impact on the body.

Anger, sadness and worry are considered as "negative emotions" and happiness, and surprise are considered as "positive emotions" in the psychology literature. Here, what determines the positivity or negativity of an emotion is its link to achievement of a goal. Negative emotions are considered "goal incongruent" emotions while positive emotions are considered "goal congruent" (Lazarus, 1994).

The nature of the emotion is related to physical symptoms. Anger was correlated positively with congested nose, tense muscles, and upset stomach; whereas sadness was positively correlated with headaches, watering eyes, and racing heart, tense muscles, and upset stomach. Feeling tense, which can be considered as a correlate of anxiety, was positively correlated with headache, racing heart, tense muscles, upset stomach,

flushed face, short breath and warm hands (Pennebaker, 1982). Happiness was correlated negatively with those symptoms. What those correlations also showed was that feeling tense, which as a physical symptom, was more correlated with different physical symptoms than anger and sadness. Those results were replicated with a second within-subject correlational study. Emotions differed in terms of associated physical symptom, both within subjects and across subjects (Pennebaker, 1982).

4.1 The relationship between anxiety and psychosomatic symptoms

In psychology literature, anxiety appears to have two different but related manifestations. Anxiety has a purpose of healthy response to environmental threats which is rooted in the nature of human's existence. (Lazarus, 1994). Also, anxiety as in the form of worry, or feeling threatened while there is no threat may point psychopathology. Anxiety in itself carries both the sense of ambiguity and uncertainty (Lazarus, 1994).

Anxiety is generally considered as a primary emotion in human experience as it is considered as a major motivator for humans (Lazarus, 1994). A person tries to feel safe. Being able to feel safe, one needs to give meaning to his or her environment. A threat which can be a symbolic threat rather than a real threat, may cause a person to feel anxious: If the person perceives the threat as mild and the threat does not endanger the person's identity, the person will be relatively less anxious; however, if the person perceives the threat to be severe and the threat endangers the person's

identity, the person will feel highly anxious (Lazarus, 1994). For instance, an inverted U function of anxiety appears for the relationship between the performance on a task and the duration and intensity of feeling anxious. If the person does not feel anxious, the person is not motivated enough to do the task; if the person feels mildly anxious, the person is motivated enough to do the task; if the person feels highly anxious, the person cannot concentrate on the task due to dysregulation of anxiety as it becomes highly intense (Cole et al., 1994).

Fear and anxiety are generally used together. In DSM-IV, phobias are considered as anxiety disorders (APA, 2000). There is a distinction between fear and anxiety. Both anxiety and fear are the emotions that are associated with a potential future harm; but what makes the distinction is the perception of the kind of harm. A person fears when there is a sudden and concrete threat; however, a person is anxious or worries when there is an uncertain and existential threat (Lazarus, 1994).

Several studies show that, when psychological symptoms are measured together with psychosomatic symptoms, the individuals who have psychosomatic symptoms show high levels of anxiety problems as well (Karslı, 2008).

Buetel, Bleichner, Heyman, Tritt and Hardt (2011) conducted a study for treatment of the patients who were diagnosed with anxiety disorders in mental care facilities in Germany. They looked for the comorbidity and they found that 60% of the patients who were diagnosed with anxiety disorder also had somatic complaints (Buetel et al., 2011). The

anxiety and somatic complaints may show themselves with similar physical symptoms due to the physiological arousal system that is associated with anxiety. Vegetative symptoms such as increase in heart rate and sweating, chest pain and abdominal symptoms such as nausea may also occur due to arousal system that is activated when a person worries (Buetel et al., 2011). This commonality is widespread and it is hard to detect the real cause. However, it shows that high levels of anxiety, as in the cases of anxiety disorders, may lead to the emergence of physical symptoms. This may suggests that anxiety is associated with psychosomatic symptoms.

The relationship between anxiety and psychosomatic symptoms was investigated by Borkovec, Roemer and Kinyon (2002). They compared emotional disclosure and worry as contrary sides of emotional processing. They mentioned the disinhibitory function of disclosure and inhibitory function of worry (Borkovec et al., 2002). Pennebaker, Hughes, and O'Heeron (1987) looked for the psychophysiology of confession and they found that when a person inhibits, the person experiences a strain on his or her body by increasing skin conductance whereas when a person disinhibits, the person discharges the strain by reducing skin conductance. Previous study has shown that the inhibition of emotions, especially worry, as a form of emotional dysregulation, has a connection with the person's health getting worse. As shown in this study, worry is a factor that may increase the likelihood of developing psychosomatic symptoms.

Vindel, Fernandez and Spielberger (2012) conducted a study on traits of anxiety and anger with individuals who have been diagnosed with

asthma or not. In this study, they measured trait anxiety regarding a person's cognitive, physiological and motor response when the person deals with a stressful event. They found that anxiety level is significantly higher for individuals who were diagnosed with asthma than the control group (Vindel et al., 2012).

Karslı (2008) investigated the effect of stress on individuals who were diagnosed with psychosomatic disorders such as coronary heart disease, dermatological disease, stomach diseases, and diabeties and also with individuals who did not have a medical diagnosis as a control group. She found that the level of stress predictors was higher with the individuals who were diagnosed with psychosomatic disorders than the control group.

Regarding the influence of stress on the development of psychosomatic symptoms, Wong and Fong (2014) conducted a study in China based on the assumption that stress causes psychosomatic symptoms. They looked for the relationship among stress, psychosomatic symptoms, anxiety and depression in which the last two were considered as mediators. Anxiety was found as a significant mediator between stress and psychosomatic symptoms (Fong & Wong, 2014). Thus, anxiety as a feeling is found to be the variable that interferes with the effect of stress on the development of psychosomatic symptoms. If the person can regulate his or her anxious states during the times of stress, the person may not develop psychosomatic symptoms.

All of the studies mentioned above show that anxiety, when it is not regulated, may play a role in influencing the development of psychosomatic symptoms.

4.2 The relationship between anger and psychosomatic symptoms

Anger is considered as an influential emotion because of its impact on both interpersonal relations and on personal experience. Anger is felt when a person's wishes, needs and goals are prevented and when a person feels that he or she was treated unfairly (Şahin, 1997). Lazarus (1994) mentioned that frustration in reaching a goal whether it happens as harm, threat or loss of the goal, could result in feeling any of the negative emotions. Anxiety can be felt when there is a possibility of a future harm that can be perceived as a threat; sadness can be felt when negative incidents cannot be reversed which also leads to feeling helpless and the person cannot blame someone else; however, anger, guilt or shame is felt when the person can attain blame for the negative incident (Lazarus, 1994). So, what makes anger different than those other negative emotions?

Anger, as mentioned above, is related to finding a person to blame for the negative incident. If the person blames another person or another thing for the occurrence of harm or loss, the person feels anger that is directed outside of oneself. If the person blames the self for the harm or loss, the person feels anger that is directed to self (Lazarus, 1994). The possibility of attaining control over the negative incident is also a crucial

part in blaming: If the person blames the self or someone else, he or she believes that one has control over the incident and is able to act differently.

Three pathways seem to emerge regarding the expression of anger (Karslı, 2008; Şahin, 1997). The first is to verbally express one's emotions and thoughts about the anger provoking event. Here, the person may have difficulties in verbally expressing anger and may also use hostile behaviors like shouting or hitting an object. The expression of anger through hostility can be a sign of dysregulation. The second way is the inhibition of anger. First, anger is inhibited and then it is transformed to something else or it is directed to a different target. Here, if the anger is not expressed verbally and explicitly, the anger may be directed towards oneself and this may cause the person to experience psychosomatic symptoms or depression (Karslı, 2008; Şahin, 1997). The third way is to express anger not only verbally but also though internal physical senses like controlling (Karslı, 2008; Şahin, 1997).

The relationship between anger and psychosomatic symptoms was investigated and found to be related with health problems. Begley (1994) looked for the relationship between expression and suppression of anger with health symptoms for business managers. Begley (1994) compared expression of anger (anger-out) and the inhibition of anger (anger-in) behaviors of managers and found a direct relationship between inhibition of anger and anxiety, depression and psychosomatic symptoms whereas there is not such a relationship between expression of anger and health symptoms.

Vindel, Fernandez and Spielberger's (2012) other findings based on their study of traits anxiety in individuals who were diagnosed with asthma

or not, is that the individuals who were diagnosed with asthma showed significantly higher levels of anger than the control group.

In Turkey, Karslı (2008) conducted a study to investigate the relationship between stress symptoms, perception of self, relational style and anger expression for individuals who were diagnosed with psychosomatic diseases (coronary heart disease, dermatological diasease, stomach disease, diabetics) compared to those with no such diagnosis. The findings showed that the individuals who were diagnosed with psychosomatic problems evidenced more negative self-perception, more negativity in interpersonal relationships and that, in relationships; they turned the anger towards themselves rather than towards others (Karslı, 2008). This is also parallel with Begley's (1994) study, that anger-in is more related with psychosomatic problems. Moreover, they expressed anger on behavioral level more than control group.

Kök (2014) investigated the relationship among self-perception, interpersonal styles and anger in individuals who had been diagnosed with coronary heart disease and diabetes and in individuals who did not have any diagnosis. The results were parallel with Karslı (2008): The individuals who had been diagnosed with a psychosomatic disorder showed more negative self-perception, had more problems in interpersonal styles and had higher levels of anger expression than the control group.

4.3 The relationship between sadness and psychosomatic symptoms

Sadness is the emotion that is related to the loss of something like loss of a goal or someone that is important for the person, such as death of a significant other, breakups in a relationship, loss in a competition and failure to accomplish goals (Lazarus, 1994). The degree of engagement is a key point regarding the feeling of sadness: If the person feels highly engaged with the person or the thing that has been lost, the person may engage more in dealing with loss (Lazarus, 1994) For example, the person may use denial to avoid loss. By doing so, the person tries to avoid feeling helpless and tries to recover the loss. During this stage, anger, guilt and anxiety may also be felt. When the person's level of engagement declines, the person starts to feel resignation rather than struggle which leads the person to accept the loss and to lower the level of engagement with the lost one (Lazarus, 1994).

In terms of pathology, sadness is considered to be related with depression in the sense that the person has difficulties regarding grieving, and the anger that is felt together with sadness rooted in feelings of helplessness is directed to oneself (Lazarus, 1994).

There are very few studies in which the relationship between sadness and psychosomatic symptoms was investigated. However, rather than sadness, the investigation of the relationship between psychosomatic symptoms and depression which can be considered as a pathologic way of expressing sadness is done.

Studies showed that the individuals who have psychosomatic symptoms tend to be diagnosed with major depressive disorder or those who have a diagnosis of major depressive disorder tend to have more psychosomatic symptoms. One of the reasons may be comorbidity of physical symptoms.

Lipozski (1990) examined previous studies to investigate the relationship between somatization and depression. When a person is diagnosed with depression, this individual may also have somatic symptoms related to depression like decrease or increase in appetite and sleep (APA; 2000). Lipowzski (1990) pointed out that fatigue, pain, weakness and problems of breathing are the four most common somatic symptoms of depression. Based on the commonalities of physical symptoms in depression and somatization, Lipowzski (1990) suggested that the individuals who are depressed are more prone to experience somatic symptoms.

In fact, Lipowski's explanation may be simplistic. Depression and physical symptoms, of course, seems to be related; however, Lipowski did not deal with the underlying problems that lead to depression. The relationship between depression and psychosomatic symptoms cannot be based only on physical symptoms. There could be some shared dynamics.

There were very few studies that investigated the dynamics between sadness and psychosomatic symptoms. For this reason, it was hard to talk about the underlying dynamics.

5. Current Study

5.1 The Purpose of the Study

The focus of this study is to examine the emotional aspect of psychosomatic processes by investigating the relationship between the individuals' ability to identify and regulate three different emotions, namely sadness, anger and worry, and his or her likelihood of developing psychosomatic complaints. The study enabled us to investigate what kind of emotion regulation problems (dysregulation, inhibition or difficulty in identification of emotions) most strongly correlate with the likelihood of experiencing psychosomatic symptoms. This study also examined whether difficulties with anger, sadness or worry is more related to psychosomatic symptoms. Moreover, this study also investigated the link between familial factors and psychosomatic symptoms. Parental health related factors and parents' degree of complaining about physical symptoms were also considered as familial factors.

Every individual has a likelihood of experiencing at least one psychosomatic symptom during their lifetime. In this study, we are not concerned with the development of a large scale of chronic somatic illness; but we are concerned with the tendency to experience psychosomatic complaints. The significance of this study lies in its investigation of the relationship between emotion regulation, parental health-related factors, demographic factors, and psychosomatic symptoms in a non-clinical population. In the literature on psychosomatics, generally, the research has

been about the specific psychosomatic problems in clinical samples. By evaluating healthier individuals like college students, the general population's psychosomatic processes can be revealed. We may thus have a better understanding of the general trends. While a multitude of studies have been done in Western cultures. Similar to the pattern in Western cultures, in Turkey, there have not been many studies on psychosomatic processes in healthier people.

The followings are the variables of the study.

Independent Variables:

1. The individual's use of three styles of emotion regulation when experiencing anger, sadness and worry. This variable was measured by using the Parental Emotion Management Scale (PEMS) on three factors: Emotional Inhibition, Dysregulation and Coping across three emotions (anger, sadness and worry).

2. The individual's level of alexithymia as measured by the Toronto Alexithymia Scale (TAS-20) on three factors: Difficulty in identifying emotions, difficulty in describing emotions and externally oriented thinking pattern.

3. Mother's and father's level of psychosomatic symptoms reported by the participant. This was measured by asking directly about the frequency of parental health complaints and parental medical diagnoses in the present or in the past and the impact of parental health problems on the parent's life on demographic form.

4. Gender

5. Socio-economic status (SES)

Dependent Variable:

1. Individual's level of psychosomatic symptoms as measured by the Somatization Scale (SS).

5.2 Hypotheses

1. It was expected that there will be a positive correlation between difficulties in emotion management regarding anger, worry and sadness and psychosomatic problems:

1a. There will be a positive correlation between difficulties in regulating anger, sadness and worry and the frequency of psychosomatic symptoms.

1b. Regarding emotion management strategies, there will be a positive correlation between emotional inhibition and emotional dysregulation and the frequency of psychosomatic symptoms.

1c.There will be a positive correlation between degree of difficulty in identification and description of emotions (alexithymia) and the frequency of psychosomatic symptoms.

1d. There will be a negative correlation between degree of emotional management coping and the frequency of psychosomatic symptoms. The individual who could cope with one's emotions like anger, sadness and worry was expected to experience lower levels of psychosomatic symptoms.

2. Participants whose parents were diagnosed with a medical problem or complained about health problems were expected to have more psychosomatic symptoms than those whose parents did not have such complaints.

3. We expected to find a gender difference on the frequency of psychosomatic symptoms. Females were expected to have more psychosomatic symptoms than males.

4. It was expected to find a negative correlation between socio-economic status and psychosomatic symptoms. It is expected that in lower socio-economic status, the person will experience more psychosomatic symptoms; whereas in higher socio-economic status, the person will experience less psychosomatic symptoms.

5. Moreover, most of the studies pointed out that there is a relationship between psychosomatic symptoms and dysregulation of negative emotions. Based on this finding, another purpose of this study was to explore the strength of the association between dysregulation of anger, sadness or worry and psychosomatic symptoms.

METHOD

1. Sample

The questionnaires were administered to 282 college students, 162 female (57%) and 120 male (43%). The participants were aged between 18 and 30, with a mean age of 21.4 (*SD* = 2.15). The demographic background of the sample is shown in Table 1.

Table 1

Demographic Background of the Sample

	M	*SD*
Age	21.4	2.15
	n	*%*
Gender		
Female	162	57.44
Male	120	43.56

Note. N=282

Participants were college students studying in Istanbul or in Izmir. Among all the participants, 81 were students of Istanbul Bilgi University, 123 were students of Fatih Sultan Mehmet Foundation University, 25 were students of Marmara University, 10 were students of Boğaziçi University, 12 were students of Koç University, 3 were students of Sabancı University and 6 were students of İstanbul Technical University and 22 were students of İzmir Economics University. The participants were recruited through

personal contacts and through instructors in universities. In İstanbul Bilgi University and Fatih Sultan Mehmet Foundation University, the researcher reached the participants through participating their classes and she collected the data in the class-room. For other schools, the instructor collected the data in the library. The education background of the sample was shown at Table 2.

Table 2

University Majors of the Sample

Major of the Participant	n	%
Law	89	31.4
Psychology	60	21.2
Vocational school of justice	49	17.3
Engineering	28	9.9
Economics	17	6
Media and communication studies	8	2.8
Nutrition and dietetics	8	2.8
Sociology	7	2.5
Literature	3	1.1
Logistics	3	1.1
English and language teaching	3	1.1
Business administration	2	0.7
Advertising	2	0.7
Music	1	0.4
Nursing	1	0.4
Arts and cultural management	1	0.4

Note. N=282

2. Instruments

Demographic Form. The participants were asked to give information about their gender, age, university and department, marital status, medical history, and family medical history and socio-economic status. Also, there were questions about the frequency of parents' medical diagnosis and physical complaints and the impact of those medical problems both in the present and in the past on parent's life.

The questions about participant's and parents' medical background were created by the researcher and her thesis advisor for this research. The purpose was to acquire information about the participant's own and familial medical history that may have a relation with psychosomatic symptoms.

The question for the participant's medical diagnosis was asked as "Have you ever been diagnosed with a medical problem? If yes, please explain" Subsequently, another question was asked to assess the impact of this medical problem on participant's daily life. The question was "How does this medical problem affect your daily life?" The participant answered this question as "none", "a little", and "a lot".

The same questions were also asked regarding both of the parents. The aim was to acquire information about parental health problems and parent's degree of complaining about physical symptoms. The participants reported their parents' medical conditions.

The question regarding parental health problems was "Does your mother/father have a known medical problem?" Rather than medical

diagnosis, known medical problem was used as a phrase to get information about parental medical conditions due to the participant's possibility of being unfamiliar with parents' diagnosis. The answer to this question was also in yes or no format. The impact of this medical problem was asked also asked to the participant.

For parental health related problems, another question was asked to acquire information about the past, during the participant's childhood years. The aim was to also take into account the possible impact of parent's medical conditions while the participant was growing up. The question was: "When you think of your childhood and youth, did your mother have any health problems?" The answer of this question was either yes or no. The participant was also asked to explain if the answer is yes. The same question was asked for the father. The impact of this health problem was also asked in the same way as it was asked for the participant's health problem.

Moreover, parents' degree of complaining about physical symptoms was asked for both parents during the participant's childhood. The aim was to acquire information about the way parents were managing with physical problems. The question was: "Did your mother complain about physical problems (like headaches, stomach aches, fatigue, health palpitations, dizziness) during your childhood and youth?" The answers to this question were "never", "sometimes" and "usually". The same question was repeated for the father (See APPENDIX B).

Parent's Emotion Management Scale (PEMS). PEMS is a measure which was adapted from Children's Emotion Management Scale (CEMS) to measure parental emotion management strategies by simply changing phrases to make it appropriate for adults (Suveg, 2003). PEMS measures emotion management strategies regarding three negative emotions which are anger, sadness (Zeman, Shipman & Penza-Clyve, 2001) and worry (Suveg, 2003). The sadness and anger scales were first developed (Zeman et al., 2001) and then the worry scale followed (Suveg, 2003). The number of questions per scale is as follows: 11 questions for anger scale, 12 questions for sadness scale and 15 questions for worry scale. Responses are on a 3 point scale which ranged from 3 (often) to 1 (hardly ever).

PEMS is designed to measure three strategies of emotion management: Inhibition, emotion dysregulation and emotion regulation coping. The frequency of use of these three emotion management strategies was measured for anger, sadness and worry.

Emotion regulation coping was defined as being able to direct an emotional experience regarding the intensity and the amount of expressed emotion and the duration of the expression (Zeman et al., 2001). It was about being able to control the expression. One of the questions of emotion regulation coping of sadness was "I can control my crying and being upset" (Zeman et al., 2001). The wording of the question was changed based on the emotion for anger and worry. "When I am feeling mad, I can control my temper" was an example for emotion regulation coping questions of anger

and “I keep myself from losing control of my worried feelings” was an example of emotion regulation coping questions for worry (Suveg, 2003).

Emotion dysregulation was the second factor of PEMS. Emotion dysregulation as an emotion management strategy was defined as under-regulation which took the form of high intensity for the experienced emotion state and/or a high amount of expressed affect (Zeman et al., 2001). The wording of emotion dysregulation items were changed according to the type of the emotion whether it was worry, anger or sadness. One example of emotion dysregulation item for worry was “I cry and carry on when I’m worried” (Suveg, 2003) (See APPENDIX C).

Inhibition as an emotion management strategy was defined as over-regulation which took the form of low intensity for the experienced emotion state and low amount of expressed affect (Zeman et al., 2001). The wording of inhibition items were changed according to the type of the emotion studied. One example of inhibition item for worry was “I get worried, but I don’t show it” (Suveg, 2003).

The reliability coefficients for each factor based on three different emotions were computed to measure internal consistency. For anger, the coefficients were found as .84 for inhibition, .38 for dysregulation and .75 for coping (Suveg, 2003).

The Turkish version was translated by Fulya Aydın (2010) and the overall reliability coefficients were found as .86 for inhibition, .73 for dysregulation and .82 for coping in a study conducted with mothers from different socio-economic backgrounds. For sadness, the coefficients were

found as .69 for inhibition, .36 for dysregulation and .34 for coping. For worry, the coefficients were found as .76 for inhibition, .52 for dysregulation and .77 for coping. For anger, the coefficients were found as .84 for inhibition, .38 for dysregulation and, .75 for coping (Aydın, 2010).

In this study, the overall reliability coefficients were found as .79 for inhibition, .73 for dysregulation and .80 for coping. For sadness, the coefficients were found as .78 for inhibition, .41 for dysregulation and .66 for coping. For worry, the coefficients were found as .66 for inhibition, .63 for dysregulation and .58 for coping. For anger, the coefficients were found as .63 for inhibition, .55 for dysregulation and .68 for coping. The reliability coefficients of inhibition, dysregulation and coping were similar to Aydın's study and the original study.

In this study, one item of sadness dysregulation subfactor was not used in the analysis, due to its negative impact on reliability coefficient. The item was "When I feel sad, I clean the house". This item decreased the Cronbach alpha score from .41 to .18. This item may not be appropriate for a college student sample.

Overall, the reliability estimates when all emotions were considered together were acceptable but they decreased when coping strategies were considered separately for three emotions due to decreased item size.

Toronto Alexithymia Scale-Twenty item (TAS-20). TAS-20 was originally developed by Bagby, Parker and Taylor in 1994 (Sayar, & Köse, 2000). Responses to each question were in a 5 point Likert-Scale Format

ranging from 1 (strongly disagree) to 5 (strongly agree). The TAS-20 is composed of three subscales: (1) difficulty in identifying emotions; (2) difficulty in describing emotions; and (3) thinking pattern that is externally oriented (Sayar, & Köse, 2000) (See APPENDIX D). The Cronbach alpha coefficient for the Turkish version was measured as .78 (Sayar, & Köse, 2000). Factors 1 and 2 were found to be strongly correlated with each other whereas the correlation between factor 3 and 2 was found to be moderate and the correlation between factor 1 and 3 was found to be weak (Sayar, & Köse, 2000). Because the Turkish version was employed with a non-clinical sample, lower correlation between factor 3 and factors 1 and 2 were expected (Sayar, & Köse, 2000). In the original study, the internal consistency was measured as .81 and test-retest reliability was measured as .78 (Sayar, & Köse, 2000). In this sample, the reliability coefficient was found as .81.

In this study, again, one item was not included during the analysis due to its negative impact on reliability. This item's correlation with other items was found to be very weak (r = -.06). The item was: "It is essential for humans to know about their emotions". When the item was deleted, reliability coefficient increased from .79 to .81.

Somatization Scale. Somatization scale was composed of 33 questions which were derived originally from Minnesota Multiple Personality Scale (MMPI) (Dülgerler, 2000). Each participant answered the questions either yes or no. For the Turkish version of Somatization Scale,

Dülgerler (2000) conducted a research with primary school teachers to developed Turkish norms for somatization scale. In this research, Kuder-Richardson-20 coefficient was found .83 and test-retest reliability was found .96 (Dülgerler, 2000). For the validity, SCL-90 was used to measure validity and .80 correlation was found between SCL-90 and somatization scale. In this sample, the reliability coefficient was found as .86 which was higher than the Turkish version (See APPENDIX E).

3. Procedure

The target population of this study was university students. Initially, the researcher contacted instructors in Istanbul Bilgi University and Fatih Sultan Mehmet Foundation University to collaborate during the data collection process. The researcher notified the participants about the aim and the information about research via telephone, e-mail or via their friends and instructors. Participation was voluntary. The researcher organized a face to face meeting with the ones who agreed to join the research. In Istanbul Bilgi University and Fatih Sultan Mehmet University, the researcher collected the data in the class. In Istanbul Bilgi University, the participants gained one extra credit for their participation. For other participants, the researcher went to universities and collected data in the library.

During the data collection, initially, the participants signed the informed consent form (see Appendix A). Then, they completed the demographic form, Parental Emotion Regulations Scale (PEMS), Toronto

Alexithymia Scale (TAS-20) and Somatization Scale (SS). The scales were presented in this order for each participant. The questionnaire took about fifteen minutes to complete. To maintain confidentiality, the informed consent forms and the survey forms were distributed and collected separately.

RESULTS

1. Descriptive Analysis

1.1. Descriptive Analysis for Demographic Variables

The three independent variables of the study were (1) the person's regulation degree of inhibition, dysregulation and coping of anger, sadness and worry, (2) the person's level of alexithymia and (3) the parental and personal health status as having a medical diagnosis and medical complaints or not. The dependent variable of the study is the individual's level of psychosomatic symptoms. Moreover, based on the existing literature, gender and socio-economic status of the individual are considered as possible independent variables.

Means, standard deviations, minimum and maximum values of the demographic variables (parental education, medical diagnosis for participant and for his or her parents, parental medical complaints) and descriptives for emotion regulation of anger, sadness, worry and alexithymia are listed in Table 3, 4, 5, 6 ,7, and 8, respectively.

Table 3 and Table 4 show the level of mother's and father's education. Table 5 shows socio-economic status of the participants. Table 6 shows the number of participants who have a medical diagnosis as well as the number of participants whose parents have a medical diagnosis. Table 7 shows parental medical complaints.

Table 3

Descriptives for Maternal Education

Level of Education	*Number(n)*	*Percentage(%)*
Elementary school	105	37
High school	77	27
College or higher	80	29

Note. N: 262

Table 4

Descriptives for Paternal Education

Level of Education	*n*	*%*
Elementary school	52	19
High school	73	26
College or higher	120	42

Note. N: 245

Table 5

Descriptives for Socio Economic Status (SES)

SES Level	*n*	*%*
Low	12	4
Medium	232	82
High	38	14

Note. N: 282

Table 6

Descriptives for Medical Diagnosis

	Medically diagnosed condition			
	Yes		No	
	n	*%*	*n*	*%*
Participant	60	22	222	78
Mother	80	28	202	72
Father	88	31	190	68

Note. N: 282

Table 7

Parental Health Complaints

	Never		Sometimes		Usually	
	n	*%*	*n*	*%*	*n*	*%*
Mother	142	59	120	43	20	7
Father	203	72	72	26	5	2

Note. N: 282 for mothers; *N:* 280 for fathers.

Among all the participants, two participants' mothers were deceased (1%) and nine participants' fathers (4%) were deceased.

1.2 Descriptive Analysis of Study Variables of Emotion Regulation and Psychosomatic Symptoms

Three scales (Parental Emotion Management Scale-PEMS, Somatization Scale-SS, and Toronto Alexithymia Scale-TAS-20) were given to measure emotional factors and psychosomatic symptoms. Mean, standard deviation, minimum, and maximum scores for these scales are shown in Table 8.

Table 8

Descriptives for PEMS, TAS-20 and SS

	Mean (SD)	*Min*	*Max*
Total Coping	34.55 (5.18)		
		21	46
Sadness Coping	11.06 (2.13)	5	15
Worry Coping	12.54 (2.19)	7	18
Anger Coping	10.93 (2.2)	6	15
Total Inhibition	27.36 (4.93)		
		14	40
Sadness Inhibition	8.76 (2.11)	4	12
Worry Inhibition	11.25 (2.47)	6	17
Anger Inhibition	7.33 (1.9)	4	12
Total Dysregulation	12.15 (2.76)	7	20
Sadness Dysregulation	3.54 (1.05)	2	6
Worry Dysregulation	5.48 (1.47)	3	9
Anger Dysregulation	3.51 (1.17)	2	6
Alexithymia	46.82 (10.83)	24	82
Psychosomatic Symptoms	11.81 (6.31)	1	28

Note. N=282.

Moreover, it was seen that females and males responded differently for those three scales. For some items, means score differs for females and males. Means and standard deviations of PEMS, TAS-20 and SS for females and males separately were given at Table 9.

Table 9

Descriptives for PEMS, TAS-20 and SS for Females and Males

	Mean (SD)	
	Female	Male
n	162	120
Total Coping	33. 68 (5.16)	35.70 (4.98)
Sadness Coping	10.61 (2.22)	11.66 (1.83)
Worry Coping	12.29 (2.12)	12.89 (2. 25)
Anger Coping	10.77 (2.18)	11.15 (2.22)
Total Inhibition	*26.41 (4.86)*	*26.64 (4.73)*
Sadness Inhibition	*8.51 (2.09)*	*9.10 (2.11)*
Worry Inhibition	*10.82 (2. 57)*	*11.84 (2.21)*
Anger Inhibition	*7.07 (1.87)*	*7.69 (1.90)*
Total Dysregulation	*12.74 (2.73)*	*11.33 (2.58)*
Sadness Dysregulation	*3.81 (1.06)*	*3.17 (0.93)*
Worry Dysregulation	*4.87 (1.56)*	*4.19 (1.26)*
Anger Dysregulation	*3.37 (1.17)*	*3.70 (1.14)*
Alexithymia	*46.16 (10.82)*	*47.70 (10.82)*
Psychosomatic Symptoms	*13.20 (6.39)*	*9.93 (5.72)*

Note. N=282.

2. The Relationship between Emotion Management Strategies and Psychosomatic Symptoms

In this study, based on the descriptive results that were presented on Table 8, it is seen that as emotion management strategy, the participants in this study employed coping more than inhibition and dysregulation, respectively. Regarding different emotions, namely worry, anger and sadness, anger was the emotion that was reported the least in this sample. It is possible that those individuals either felt sad and anxious more than they felt angry or they did not want to report the experiences of anger.

It was hypothesized that emotion dysregulation and emotion inhibition as emotion management strategies would be positively correlated with psychosomatic symptoms; whereas emotion coping would be negatively correlated with psychosomatic symptoms. To test this hypothesis, correlational analysis was used. Multiple correlation analysis was used to examine the interactions among total inhibition, total dysregulation and total coping of emotions, alexithymia, and psychosomatic symptoms. The results are presented in Table 10.

First, a Pearson correlation analysis was employed to investigate the relationship between different emotion management strategies and psychosomatic symptoms. For this analysis, correlations of total scores of dysregulation, inhibition and coping of negative emotions were examined with psychosomatic symptoms and alexithymia.

Table 10

Correlation Matrix of Emotion Regulation Strategies, Alexithymia and Psychosomatic Symptoms

	1.	2.	3.	4.	5.
1.Total Coping	--	.39**	-.45**	-.35**	-.30**
2.Total Inhibition		--	-.32**	-.01	.21**
3.Total Dysregulation			--	.26**	.18**
4.Total Somatization				--	.39**
5.Alexithymia					--

Note. $^{**}p<.01$

As predicted, a positive correlation between dysregulation of emotions and psychosomatic symptoms was found (r (280) = .26, p < .001) and a negative correlation between frequency of using coping strategies and psychosomatic symptoms were found (r (280) = -.35, p <.001). The relationship between inhibition of emotions and psychosomatic symptoms was not found to be significant (r (280) = -.002, p>.05). Based on these correlations between psychosomatic symptoms and among those three emotion management strategies, only dysregulation of emotions was found to increase the likelihood of psychosomatic symptoms; whereas, coping with emotions was found to decrease the likelihood of psychosomatic symptoms. Inhibition of emotions did not correlate with the development of psychosomatic symptoms, in this sample.

In order to investigate the connection of psychosomatic symptoms with different emotion management strategies of specific emotions, another

correlational analysis was employed using scores on management of anger, sadness and worry and psychosomatic symptoms. These correlations were presented on Table 11.

Table 11

Correlations among Emotion Regulation of Anger, Sadness and Worry, Alexithymia and Psychosomatic Symptoms

	1	2	3	4	5	6	7	8	9	10	11
1.Sadness-Coping	--	.31**	-.47**	.47**	.27**	-.18**	.44**	.26**	-.41**	-.18**	-.34**
2. Sadness-Inhibition		--	-.33**	.76	.37**	-.03	.07	.39**	-.24**	.24**	.04
3. Sadness-Dysregulation			--	-.30**	-.20**	.31**	-.27**	-.24**	.51**	.13**	.23**
4. Anger-Coping				--	.46**	-.49**	.420**	.17**	-.30**	-.26**	-.16**
5. Anger-Inhibition					--	-.23**	.12**	.32**	-.14**	.10*	.02
6. Anger-Dysregulation						--	-.14*	-.07	.37**	.22**	.08
7. Worry-Coping							--	.32**	-.36**	-.27**	-.32**
8. Worry-Inhibition								--	-.24**	.12*	-.06
9. Worry-Dysregulation									--	.20**	.26**
10. Alexithymia										--	.39**
11.Psychosomatic Symptoms											--

Note. **. $p<0,01$; *. $p<0,05$

Positive correlations were found between sadness dysregulation and psychosomatic symptoms (r (280) =.23, p<.01), and between worry dysregulation and psychosomatic symptoms (r (280) =.26, p<.01), as expected. However, anger dysregulation and psychosomatic symptoms were not significantly correlated (r (280) =.08, p>.05). Based on those results, dysregulation of worry and sadness was significantly related to psychosomatic symptoms but dysregulation of anger was not significantly related.

Sadness, anger, and worry inhibition were expected to be positively correlated with psychosomatic symptoms. However, psychosomatic symptoms were not found to be correlated to inhibition of any emotions (sadness (r (280) =.04, p>.05), anger (r (280) =.02, p>.05), or worry (r (280) = -.06, p>.05). Those findings indicated that worry dysregulation and sadness dysregulation were the only factors that were positively correlated with psychosomatic symptoms.

Coping with sadness, anger, and worry was expected to be negatively correlated with psychosomatic symptoms. As predicted, significant negative correlations were found between sadness coping and psychosomatic symptoms (r (280) = -.34, p<.01), anger coping and psychosomatic symptoms (r (280) = -.16, p<.01), and worry coping and psychosomatic symptoms (r (280) = -.32, p<.01). This finding indicated that the individuals who can control and regulate expression of anger, sadness and worry were less likely to experience physical problems.

In this study, besides emotion management, alexithymia was examined in relation to development of psychosomatic symptoms. Alexithymia was expected to correlate positively with psychosomatic symptoms. The findings were in line with the hypothesis. A significant positive correlation between alexithymia and the development of psychosomatic symptoms was found (r (280) = .39, p <.001). This means that individuals who reported having difficulties in identification and description of emotions were more likely to experience physical problems.

3. The Relationship between Familial Factors and Psychosomatic Symptoms

In this study, it was hypothesized that parental health related factors and parents' degree of complaining about physical symptoms were among the significant factors associated with psychosomatic symptoms. The relationship between parental health related factors and the individual's level of psychosomatic symptoms was tested with t-test and ANOVA analyses.

Before looking for the relationship between parental health status and the participant's reports of the frequency of psychosomatic symptoms, the relationship between the participant's health status and the frequency of his or her report of psychosomatic symptoms was evaluated. An independent samples t- test analysis was done. The relationship between participant's medical diagnosis and his or her report of the frequency of psychosomatic symptoms was found to be significant (t (280) = -4.38,

$p<0.001$). It means that those who reported to have medical diagnoses were more likely to experience psychosomatic complaints themselves.

Parental health was evaluated by two variables for both mother and father. The first variable was whether or not the parent was diagnosed with a medical illness at the present or past as reported by the participant. This variable was measured on two levels; yes and no.

The second variable of parental health related factors was the frequency of the parental complaints about their physical symptoms like headaches, stomachaches during the participant's childhood, as reported by the participant. This variable was measured on three levels; "usually", "sometimes" and "never".

As it can be seen in table 6 and 7, very few participants endorsed the 'usually' option for frequency of parental physical complaints. Therefore, this category was combined with the 'sometimes' category for both mothers and fathers. Subsequently, two levels of maternal and paternal medical diagnosis and two levels of maternal and paternal frequency of complaining about physical symptoms were entered into four t-test analyses with the number of participant's psychosomatic symptoms as dependent variable. However only two levels of parental frequency of complaining about physical symptoms were used (two were combined) due to the disproportion of selections each level. Those who answered as never considered as one level for frequency of parental medical complaints. The second level was created by combining the ones that reported the frequency of parental

complaints as usually and sometimes. Thus, the frequency of parental complaints became dichotomous; never and usually-sometimes.

Independent sample t tests were used to explore the relationship between parent's medical diagnosis and the frequency of participant's psychosomatic symptoms. Based on those analyses, the mean score for participants whose mothers had a medical diagnosis was found 12.88 (*SD*= 6.91) and the mean score for those whose mothers did not have a medical diagnosis was found 11.36 (*SD*= 6.03). The difference in the frequency of participant's psychosomatic symptoms was not significant (t (280) = -1.80, p>.05). The mean score for participants whose fathers had a medical diagnosis was found as 13.04 (*SD*= 6.15) and the mean score for those whose fathers did not have a medical diagnosis was found to be 11.29 (*SD*= 6.12). The relationship between paternal medical diagnosis and the frequency of participant's psychosomatic symptoms was found to be significant
(t (276) = -2.17, p<.05). This finding suggests that those who reported their fathers to have medical diagnoses were more likely to experience psychosomatic complaints themselves, although there were no such relation for mothers.

Two independent samples t-test were also done to explore the relationship between parent's past medical diagnosis and the frequency of participant's psychosomatic symptoms. Based on those analyses, the relationship between maternal past medical diagnosis and the frequency of participant's medical diagnosis was not found to be significant (t (280) = -

1.52, p>.05); whereas the relationship between paternal past medical diagnosis and the frequency of participant's medical diagnosis was found to be significant (t (278) = -2.60, p < .05). This finding was found to be in line with parental current medical diagnosis.

The frequency of parental complaints about physical symptoms during the participant's childhood was also analyzed with two t-test analyses for mothers and fathers with participant's frequency of psychosomatic symptoms as the dependent variable.

Based on those analyses, the mean score for participants whose mothers had complaints about physical symptoms was 12.65 (SD= 6.20) and the mean score for those whose mothers did not complain about physical symptoms was 10.97 (SD= 6.34). Independent samples t test was done and the result indicated that there was a significant relation between maternal medical complaints and the frequency of participant's psychosomatic symptoms (t (280) = -2.25, p<.05). This finding suggested that those who reported their mothers to have medical diagnoses were more likely to experience psychosomatic complaints themselves.

Another independent samples t-test was done to examine the relationship between frequency of paternal medical complaints and the participant's psychosomatic symptoms. Based on those analyses, the mean score for participants whose fathers had complaints about physical symptoms was 13.09 (SD= 6.41) and the mean score for those whose fathers did not complain about physical symptoms was 11.40 (SD= 6.21). A significant relation between paternal physical complaints and the frequency

of participant's psychosomatic symptoms was also found (t (280) = -2.01, p<.05). This finding suggests that those who reported their fathers to have complain frequently from physical symptoms were more likely to experience psychosomatic complaints themselves, compared to whose fathers did not complain.

Based on those analyses, an interesting pattern appears regarding parental health problems and parental health complaints and the children's level of psychosomatic symptoms: Fathers' medical diagnosis and diseases seem to have an influence on children's psychosomatic symptoms; whereas, no association was found between maternal illness and participants' somatic complain frequency. For both mothers and fathers, the frequency of complaining about health problems, rather than actual medical diagnosis, seemed to have an influence on children's psychosomatic symptoms.

4. The Relationship among Emotional and Familial Factors and Psychosomatic Symptoms

A stepwise regression analysis was carried out to assess the relative predictive power of emotional and familial factors over psychosomatic symptoms. In this analysis, the dependent variable was the number of psychosomatic symptoms and the independent variables were gender, participant's medical diagnosis, participant's mother's medical diagnosis, participant's father's medical diagnosis, maternal physical complaints, paternal physical complaints, years of maternal education, years of paternal education, alexithymia, worry dysregulation, anger dysregulation, sadness

dysregulation, worry inhibition, sadness inhibition and anger inhibition. The findings of this analysis are presented on Table 12.

Table 12

Regression Coefficients

	B	*B SE*	*β*
Step 1			
Constant	1.24	1.54	
Alexithymia	0.23	0.03	.39**
Step 2			
Constant	5.61	1.71	
Alexithymia	0.23	0.03	.41**
Gender	-3.45	0.68	-.27**
Step 3			
Constant	4.66	1.67	
Alexithymia	0.23	0.03	.40**
Gender	-3.20	0.66	-.25**
Medical Diagnosis	3.51	0.79	.23**
Step 4			
Constant	1.84	1.93	
Alexithymia	0.21	0.03	.37**
Gender	-2.71	0.67	-.21**
Medical Diagnosis	3.58	0.78	.23**
Worry Dysregulation	0.64	0.22	.15*
Step 5			
Constant	1.00	1.95	
Alexithymia	0.21	0.30	.37**
Gender	-2.62	.67	-20**
Medical Diagnosis	3.60	.77	.23**
Worry Dysregulation	.67	.23	.16**
Maternal medical complaints	1.45	.63	.11*

Note R^2=.15 for Step 1, R^2=.23 for Step 2, R^2= .28 for Step 3, R^2=.30 for Step 4, R^2=.31 for Step 5 (p<.05).
** p<.01.
*p<.05.

Stepwise regression analysis resulted in five steps. Step 5 was the most comprehensive one, while being significant. The findings showed that alexithymia, gender, participant's medical diagnosis, worry dysregulation

and maternal medical complaints were significantly related with the frequency of psychosomatic symptoms (F (5, 269) = 24.61, $p < .01$). The multiple correlation coefficient was .56, indicating that 31 % of the variance in psychosomatic symptoms was explained.

Considering all the factors that were significantly related with psychosomatic symptoms; alexithymia, gender, participant's medical diagnosis, worry dysregulation and maternal medical complaints respectively were found the variables that were most significantly related with psychosomatic symptoms. If the person has difficulty in identification and description of different emotions, those who were female, those who have already been diagnosed with a medical illness, those who have difficulty in managing worry, and those whose mothers had physical complaints are more likely to experience psychosomatic symptoms. Among anger, worry and sadness, worry dysregulation was found to be the emotion that was the strongest association with psychosomatic symptoms.

Because gender was found to be one of the possible predictive factors of psychosomatic symptoms, two more stepwise regression analyses were done for females and males. The results of those analyses were presented at the end of the results section, under additional analyses heading.

5. The Relationship between Demographic Variables and Psychosomatic Symptoms

The relationship between demographic variables includes the relationship between gender and psychosomatic status and the relationship between socio-economic status and psychosomatic symptoms. Those variables were hypothesized as independent variables. Table 13 shows the frequency of psychosomatic symptoms based on gender. Table 14 shows the frequency of psychosomatic symptoms based on parental education.

5.1 The Relationship between Gender and Psychosomatic Symptoms

Table 13

Frequency of Psychosomatic Symptoms based on Gender

M (SD)	
Female	Male
13.20 (6.39)	9.93 (5.72)

Note. N=282

It was hypothesized that females have more psychosomatic symptoms than males. T-test analysis was used to investigate the relationships between gender and psychosomatic symptoms. One t-test analysis was conducted to investigate the relationship between two levels of gender; female and male, as the independent variable and psychosomatic symptoms as the dependent variable.

In this study, 120 male and 162 female students participated. In the literature, it appears that women tend to have more psychosomatic symptoms than men. In this study, the mean score of the frequency of psychosomatic symptoms for females was found as 13.20 (*SD*= 6.39) and the mean score of the frequency of psychosomatic symptoms for males was found as 9.93 (*SD*= 5.72). Independent samples t test was done and the result indicated that there was a significant relation between gender and the frequency of participant's psychosomatic symptoms (t (280) = 4.44, p<.001). This means that for males and females, their level of psychosomatic symptoms differ: Females suffer from more psychosomatic symptoms than males. This means that women are at more risk for developing psychosomatic symptoms and health complaints than males between the ages of 18 and 30.

5.2 The Relationship between Socio-Economic Status and Psychosomatic Symptoms

Table 14

Frequency of Psychosomatic Symptoms based on Parental Education

	M (SD)		
	Elementary School	High School	University
Maternal Education	12.69 (6.38)	12.12 (6.64)	10.38 (5.75)
Paternal Education	12.36 (5.35)	12.85 (7.35)	10.87 (5.98)

Note. N=282

It was hypothesized that participants who were coming from lower socio-economic status were expected to have more psychosomatic symptoms than participants who were coming from higher socio-economic status. The participants were asked to report both mother's and father's education level and their family's socio-economic status as low, medium and high. The relationship between all of those three variables and psychosomatic symptoms were investigated by using three ANOVA tests. Mother's and father's level of education were categorized in three categories as "primary school or less"," high school graduates" and "university or higher graduates".

ANOVA analysis was done and the only significant main effect was found with regard to mother's level of education (F (2, 259) = 3.20, p<.05). Post-Hoc Scheffe test was conducted to investigate the differences between those three levels of maternal education level and the frequency of participant's psychosomatic symptoms. Post-Hoc analysis using Scheffe revealed that the significant difference was found between elementary school graduates (M=12.69, SD= 6.98) and university graduates (M= 10.38, SD=5.76) (p<.05). This shows that participants whose mothers has only primary school education are more likely to show were more educated, like university graduates, have lower levels of psychosomatic symptoms; whereas participants whose mothers had only primary school education are more likely to show psychosomatic symptoms.

The relationships between father's level of education and psychosomatic symptoms (t (280) =.177, p>0.05) and the participants own report of their family's socio-economic status and psychosomatic symptoms (t (280) =.189, p>0.05) were not to found to be significant. In this sample, only maternal education as an independent variable was found to be significant in relation with the participant's level of psychosomatic symptoms.

6. Additional Analyses

6.1. Descriptive Analysis of Reported Physical Illness

As it was showed at Table 6, 60 of the participants reported to have medical diagnoses while 222 participants did not have medical diagnoses. Seven participants reported more than one medical diagnosis. Three of the participants reported that they had a medical diagnosis but they did not report the type of the medical diagnoses. Table 15 shows all medical problems reported by the participants and number of the participants reported that medical problem. The number of participants is more than 60, since 7 participants reported more than one medical problem.

Among all, asthma, allergies and stomach and digestion problems which were generally considered as psychosomatic problems were reported more than other physical problems. The most reported physical problem was ophthalmological problems like myopia, hypermetrope and high eye pressure. Vitale, Sperduto and Ferris (2009) found that between ages 12 and

54, the prevalence of myopia is 41 % in the U.S. Thus, these kinds of ocular problems are common in the population; but it was just reported by 12 participants, four percent of the participants. In the general population, the incidence of ocular problems is more than four percent. It is considered that those participants who reported ophthalmological problems as medical disorders can be more preoccupied with their physical problems.

Table 15

Descriptives of Reported Physical Illnesses

Medical Diagnosis	Number of participants
Ophthalmological problems	12
Stomach and Digestion Problems	10
Asthma	9
Allergy	9
Cardiac problems	4
Hernia	3
Anaemia	3
Psychiatric problems	3
Thyroid and glycemic problems Rheumatism	3
Musculoskeletal problems	3
Migraine	2
Dermatological problems	2
Migraine Kidney	2
Kidney problems	1
Polycystic ovary syndrome	1
Obesity	1

Note. N=60

6.2 Regression by Gender

As additional analyses, two separate stepwise regression analyses were carried out to assess the relative predictive power of emotional and familial factors over psychosomatic symptoms for males and females. Because gender was found to be the second most influential factor related with psychosomatic symptoms, to investigate beyond the gender factor, emotional and familial factors in their relationship with psychosomatic symptoms were assessed separately for males and females. In this analysis, the dependent variable was the number of psychosomatic symptoms and the independent variables were participant's medical diagnosis, participant's mother's medical diagnosis, participant's father's medical diagnosis, maternal physical complaints, paternal physical complaints, years of maternal education, years of paternal education, alexithymia, worry dysregulation, anger dysregulation, sadness dysregulation, worry inhibition, sadness inhibition and anger inhibition. The findings of this analysis are presented on Table 16 for females and Table 17 for males.

Table 16

Regression Coefficients for Females

	B	*B SE*	*β*
Step 1			
Constant	2.97	2.06	
Alexithymia	0.22	0.04	.37**
Step 2			
Constant	1.93	2.00	
Alexithymia	0.22	0.04	.38**
Participant's diagnosis	3.87	1.50	.26**
Step 3			
Constant	-0.76	2.21	
Alexithymia	0.20	0.04	.34**
Participant's diagnosis	3.90	1.03	.26**
Worry Dysregulation	0.76	0.29	.18*

Note R^2=.14 for Step 1, R^2=.21 for Step 2, R^2= .24 for Step 3 (p<.05).
** p<.01.
*p<.05.

Stepwise regression analysis for females resulted in three steps. Step 3 was the most comprehensive one, while being significant. The findings showed that alexithymia, participant's medical diagnosis and worry dysregulation were significantly related with the frequency of psychosomatic symptoms for females (F (3, 156) = 16.65, p < .01). The multiple correlation coefficient was .49, indicating that 24 % of the variance in psychosomatic symptoms for females was explained.

Table 17

Regression Coefficients for Males

	B	*B SE*	*β*
Step 1			
Constant	-2.46	2.01	
Alexithymia	0.26	0.04	.50**
Step 2			
Constant	.33	2.56	
Alexithymia	0.24	0.43	.45**
Maternal education	-0.26	0.10	-.20*
Step 3			
Constant	1.27	2.51	
Alexithymia	0.23	0.04	.43**
Maternal education	-0.26	0.10	-.20*
Participant's diagnosis	2.81	1.18	.19*
Step 4			
Constant	4.94	2.98	
Alexithymia	0.24	0.04	.46**
Maternal education	-0.28	0.10	-.22**
Participant's diagnosis	2.80	1.16	.19
Sadness inhibition	-0.46	0.21	-.18

Note R^2=.25 for Step 1, R^2=.29 for Step 2, R^2= .32 for Step 3, R^2= .35 for Step 4 (p<.05).
** p<.01.
*p<.05.

Stepwise regression analysis for males resulted in four steps. Step 4 was the most comprehensive one, while being significant. The findings showed that alexithymia, maternal years of education, participant's diagnosis and sadness inhibition were significantly related with the frequency of psychosomatic symptoms for males (F (4, 110) = 14.94, p <.01). The multiple correlation coefficient was .59, indicating that 35 % of the variance in psychosomatic symptoms for males was explained.

Overall, those regression analyses indicated that for males and females, different emotional and familial factors were related with the frequency of psychosomatic symptoms. Alexithymia and participant's diagnosis, for both females and males, were found to be common factors that were related with the frequency of psychosomatic symptoms. For emotional factors, worry dysregulation was found to be significantly correlated with the frequency of psychosomatic symptoms for females; whereas sadness inhibition was found to be significantly correlated with the frequency of psychosomatic symptoms for males. Regarding emotional factors, two different mechanism and two different emotions were found to be related with the frequency of psychosomatic symptoms. Moreover, years of maternal education was found to be significantly related with the frequency of psychosomatic symptoms for males; while it was not found to be significantly related with the frequency of psychosomatic symptoms for females.

DISCUSSION

The aim of this study was to investigate the relationship between proneness to develop psychosomatic symptoms and several emotional and demographic factors. In this study, the emotional factors included the emotion regulation strategies of inhibition, coping and dysregulation of anger, sadness and worry as well as alexithymia which is a person's difficulty to name and describe different emotions and difficulty to distinguish between different emotions. Demographic factors included gender, socio-economic status, participant's medical diagnosis and familial health related factors. These factors included medical diagnosis and health complaints of both parents. In this study, the relationship among a person's emotion regulation capacity regarding anger, sadness and worry, the frequency of developing psychosomatic symptoms, and the tendency to develop psychosomatic symptoms in the family together with the person's history of having medical problems were explored. Moreover, demographic factors as socio-economic status and gender were also considered significant points to explore.

Total of 282 university students were assessed with paper-pencil questionnaires. The correlation among demographic, familial and emotional factors and psychosomatic symptoms were evaluated. Multiple significant correlations were found. Specifically, the participant's medical history, mother's medical diagnosis and father's medical complaints were found as significantly related with the participants' psychosomatic symptom frequency. Moreover, the relationship between emotion regulation and

psychosomatic symptoms was found to be significant. Specifically, emotion dysregulation of worry and sadness were found to be significantly and positively correlated with the frequency of psychosomatic symptoms; whereas emotion coping of worry, sadness and anger were found to be significantly and negatively correlated with the frequency of psychosomatic symptoms. Alexithymia was also found a significant factor regarding the development of psychosomatic symptoms. Females and the individuals whose mother's education level was lower than high-school were found to experience psychosomatic symptoms more than males and those participants whose mothers had a higher education level. When those factors were evaluated together with s stepwise regression analysis, alexithymia, gender, participant's medical diagnosis, worry dysregulation and maternal physical complaints were found to be the most related factors with psychosomatic symptoms. In this section, both significant and not significant demographic, familial and emotional factors will be discussed regarding their relationship with the development of psychosomatic symptoms

1. Emotional Factors

1.1 Emotion Regulation and psychosomatic symptoms

Every emotion functions to organize human experience and every emotion has a specific function and specific meaning (Cole, Michel and Teti, 1994). Cole, Michel and Teti (1994) regards emotions as "regulatory

and regulated" by itself. Emotions both regulated a person or the environment and emotions are regulated based on the circumstances.

Dodge and Garber (1991) pointed out that every emotion involves three separate but interrelated systems and processes: Neurophysiological, behavioral-expressive and cognitive and experiential process (Dodge & Garber, 1991). According to Dodge and Garber (1991), emotion regulation is the interaction of neurophysiological, behavioral-expressive and cognitive-experiential processes. This regulation involves two domains: Intradomain and interpersonal domain (Dodge & Garber, 1991). Emotion regulation is the constant process between the person's emotional patterns and its relation to environmental conditions (Cole, Michel & Teti, 1994).

The aim of this research was to investigate the relationship between emotion regulation and psychosomatic symptoms. Based on Dodge and Garber's (1991) model, it is seen that emotion regulation, in itself, involves physiological response patterns. It means that physical reactions are part of emotion regulation processes. But when do those "normal" physical responses become psychosomatic symptoms?

Those "normal" physical responses become "pathologic" when a person fails to regulate. Pennebaker (1982) showed that specific emotions were related with specific physical responses. For example, anger was related with tense muscles, anxiety was related with upset stomach and sadness was related with headaches.

When those three systems do not interact, the emotion cannot be regulated. Zeman et al. (2001) mentioned that emotion regulation involves

emotional management which is a person's ability to cope with one's emotional experiences by directing it and by dealing with the intensity and the amount of emotional experiences. In this study, to measure emotion regulation, emotion management strategies of undergraduate students were measured. Emotion management includes three processes: Coping, inhibition and dysregulation. Zeman et al. (2001) considered emotion regulation coping as being able to direct emotional experience regarding the intensity, amount of expressed emotion and the duration of the expression. Inhibition which is over-control of emotional expression by expressing it in lower intensity and lower amount and dysregulation which is under-control of emotional expression by expressing it in higher intensity and higher amount are considered as forms of dysfunction in emotion regulation.

In the literature, it is seen that emotions and emotion regulation are related with psychosomatic symptoms. Specifically, emotion dysregulation seemed to play a role in the development of psychosomatic symptoms. Negative emotions were found to be more related than positive emotions with psychosomatic symptoms (Pennebaker, 1982). For this reason, the relationship between emotion regulation of anger, sadness and worry and psychosomatic symptoms had been investigated. Here, emotion regulation is measured based on Zeman et al.'s (1991) emotion management strategies.

Correlational analysis was used to assess the relationship between coping, inhibition, and dysregulation of anger, sadness and worry and psychosomatic symptoms. Those three management strategies of three

different emotions and their relationship with psychosomatic symptoms will be discussed first separately, than together.

It was expected that there will be a positive correlation between inhibition and dysregulation of emotions and psychosomatic symptoms; whereas there will be a negative correlation between the ability to cope emotions and psychosomatic symptoms. In this study, regarding the relationship between emotion management and psychosomatic symptoms, it was found that emotion dysregulation may increase the likelihood to develop psychosomatic symptoms; whereas emotion coping may decrease the likelihood to develop psychosomatic symptoms.

The relationship between emotion management strategies and psychosomatic symptoms had been also investigated for specific emotions, namely sadness, anger and worry, as it was hypothesized.

Starting with anger, it was found that there was a negative correlation between anger coping and psychosomatic symptoms. It means that when a person can cope and regulate his or her anger, this person experiences lower level of psychosomatic symptoms. For dysfunction of emotion regulation, it was found that neither the relationship between the inhibition of anger and psychosomatic symptoms nor the relationship between dysregulation of anger and psychosomatic symptoms were found to be significant.

This finding for anger that neither inhibition nor dysregulation was correlated with psychosomatic symptoms differed from the existing literature. Several studies showed that anger, especially inhibition of anger,

increased a person's likelihood to develop psychosomatic symptoms (Begley, 1994; Karslı, 2008). This study failed to find a correlation between anger inhibition and anger dysregulation with psychosomatic symptoms. Overall, in this sample, anger was the least reported emotion. In this sample, while using PEMS, participants reported anger less than sadness and worry. It may be related to social desirability effect that the participants might not want to report their experiences of anger.

For sadness, it was found that there is a negative correlation between sadness coping and psychosomatic symptoms. It means that when a person can regulate his or her sadness expression, the person is less likely to experience psychosomatic symptoms. For dysfunction of regulation of sadness, it was found that there was a negative correlation between sadness dysregulation and psychosomatic symptoms. It means that when a person cannot regulate the intensity of the sadness, he or she is likely to experience more psychosomatic symptoms. However, the relationship between sadness inhibition and psychosomatic symptoms was found insignificant. It means that under regulation of sadness was related with the likelihood to experience more psychosomatic symptoms; whereas over regulation of sadness was not related in that way.

For worry, it was found that there was a negative correlation between worry coping and psychosomatic symptoms. It means that when a person can regulate his or her expression of worry by coping, the person is less likely to experience psychosomatic symptoms. For dysfunction of regulation of worry, it was found that there was a negative correlation

between worry dysregulation and psychosomatic symptoms. It means that when a person cannot regulate the intensity of the anxiety, he or she is likely to experience more psychosomatic symptoms. High intensity of worry can trigger the emergence of psychosomatic symptoms. However, the relationship between worry inhibition and psychosomatic symptoms, again, was found insignificant. To sum up, like sadness, under regulation of worry was related with the likelihood to experience more psychosomatic symptoms; whereas over regulation of worry was not related.

To sum up, coping of anger, sadness and worry were found to be negatively correlated with psychosomatic symptoms; whereas dysregulation of sadness and worry were found to be positively correlated with psychosomatic symptoms.

In this research, rather than emotional inhibition, emotion dysregulation was found to be correlated with psychosomatic symptoms. Specifically, worry dysregulation was found to be the most related emotion regulation pattern. It means that, for anger, sadness and worry, worry seemed to be the most related emotion regarding psychosomatic symptoms. One reason may be that worry, by itself, is amorphous. It includes uncertainity (Lazarus, 1994). Sadness and anger are more defined emotions, more certain. However, worry is not that defined. When a person can define an experience, generally, the level of worry decreases. This inability to define an emotion may situate worry in a place that makes it harder to regulate. In fact, in DSM-IV, lots of disorders include worry as a part of a mental disorder (APA, 2000).

In this study, dysregulation of anger was not found to be significantly correlated with psychosomatic symptoms. One reason may be contextual. Boratav, Sunar and Ataca (2011) conducted a study with emotion display rules which are rules about the appropriateness of emotional expression in a specific culture. It means that individuals, as a part of society, adjust their emotion expressions based on some rules. In this study, a sample of undergraduate students were asked to what is appropriate to do if they feel surprise, happy, sad, anger, fear, contempt and disgust. They were asked for two different context as public and private contexts.

The most important finding of this research was that the kind of emotion determined how it was rated to be experienced appropriately (Boratav et al., 2011). Happiness was found to be expressed appropriately; whereas more negative emotions like anger, contempt and disgust were found inappropriate to express. Moreover, it was found that, it was more appropriate to experience all of those emotions in private sphere rather than public (Boratav et al., 2011).

This display rules may have an impact on the participants. As mentioned above, anger was among the emotions that were found dangerous to express publicly (Boratav et al., 2011). In this sample, the participants answered the questions in a public place, in school. They did not know the researcher. Even though the confidentiality established and they were informed about confidentiality both in the informed consent and verbally by the researcher, it might be hard to report their anger expression properly.

Regarding dysregulation of emotions, except for anger, the negative correlations between sadness dysregulation and worry dysregulation and psychosomatic symptoms were found. This may also point out that the nature of the emotion may influence how to report.

In the literature, it was found that inhibition of an emotion and psychosomatic symptoms was correlated (Karslı, 2008; Pennebaker et al., 1988). However, this study fails to find a positive correlation between inhibition and psychosomatic symptoms. Interestingly, positive correlations were found between inhibition and coping.

Zeman et al. (2001) defined inhibition as over-regulation of the intensity and the amount of expressed emotion. PEMS which was used as a measure for emotion management was developed by Zeman et al. (2003) and Suveg (2003). Based on the correlations between inhibition and coping, one of the weaknesses of this scale may be the differentiation between inhibition and coping. The items in this scale that aim to measure inhibition may have too many commonalities with adaptive coping. Thus this scale may not be adequately differentiating inhibition from coping.

1.2 Alexithymia and psychosomatic symptoms

Alexithymia stands for affective disturbances that show itself as difficulty in (1) identification and description of emotions and in (2) discrimination between feelings and sensations of the body for emotional arousal and restriction of imagination and style of cognition which are (3) restriction of imaginative processes; and (4) an externally oriented cognitive

style (Taylor, et. al., 1991). Alexithymia is considered to be a factor that may deteriorate health via increasing general susceptibility to form psychosomatic symptoms (Taylor et. al., 1991). Alexithymia is considered as a part of cognitive part of emotion processing which in turn influences emotion regulation processing. Those individuals who have high levels of alexithymia fail to experience subjectively those emotions and to mentally represent affective experiences (Taylor et. al., 1991). They feel the same emotion; but, they cannot differentiate one emotion from the other and they cannot add a subjective aspect to that experience.

The alexithymic individuals have difficulties regarding symbolization of the affective experiences which, in turn, increase their likelihood to develop psychosomatic symptoms (Taylor, 1992). For both alexithymia and psychosomatic processes, the underlying factor is the inability to mentally represent an emotion. Instead, a person who has psychosomatic symptoms or who has alexithymic characteristics experiences that kind of affective experiences on bodily level.

In this study, participants were given alexithymia questionnaire, as well. In this sample, the relationship between alexithymia and psychosomatic symptoms was found to be positively correlated. It means those individuals who had difficulty in naming and describing affective experiences tend to have higher levels of psychosomatic symptoms. For that reason, alexithymia may be considered as one factor in emotion regulation regarding the relationship between emotion regulation and psychosomatic symptoms. Difficulty in naming and describing emotions may have an

impact on emotion regulation. It has an effect as a dimension of emotion dysregulation.

2. Familial Factors

Schreier and Chen (2013) found that parenting mediates the relationship between socio-economic status and the development of psychosomatic symptoms with adolescents who were diagnosed with obesity and asthma. Parenting seems to play a role.

Regarding the theories of psychosomatic symptoms, attachment perspective (Gubb, 2013) and affect dysregulation perspectives (Taylor, 1997) were mentioned above. Both of those two perspectives stressed the importance of the relationship between the infant and the caregiver.

The Attachment perspectives talked about the importance of affect regulation through the relationship the infant and the caregiver. Attachment between the infant and the caregiver serves the feeling of intimacy security for the infant (Fonagy et al., 2002; Gubb, 2013). During those early years, the caregiver's task is to mirror and regulate the infant's affective and motor experiences. Affective approach also pointed out the importance of infant-caregiver relationship and its regulative and reflective function. When the caregiver regulates the infant's affective states, the infant becomes able to incorporate motor, visceral and sensory components of an emotion with word and images, thus, the infant can mentally represent the emotion (Taylor, 2003). If the infant cannot mentally represent those emotions, he or she lives those emotions on the soma (Taylor, 2003).

Both of those two perspectives mentioned the importance of caregiver-infant relationship, especially the regulative function of this relationship, on the development of psychosomatic symptoms. In this study, the infant-mother relationship or mothering was not explored. Rather, the frequency of the psychosomatic symptoms in the family had been investigated. Given the fact that the relationship between the caregiver and the infant matters, the caregiver's regulative function matters. If the caregiver had difficulties to regulate his or her own physical sensations, we can expect her to have difficulties in regulating his or her infant. Thus, if the parent experiences psychosomatic symptoms, the parent may have difficulties to regulate the infant's affective states which may increase the likelihood of psychosomatic symptoms in the growing child.

Moreover, not only caregiver's affective regulation, but also modeling may have an impact on the growing child's frequency of psychosomatic symptoms. Stuart and Noyes (1999) mentioned that parental illness may be factor that may increase the child's experience of psychosomatic symptoms through social learning or modeling: If the child was exposed to parental models that were ill, the child may model or learn their behavior to express his or her emotions. It may be a way to express what is going on in his or her psychic life. The child implements the behaviors that he or she was portrayed by the parents.

Regarding familial factors for psychosomatic symptoms, based on a longitudinal study which was done with individuals who were diagnosed with somatization disorder or not, Craig et al. (1993) found that insufficient

parental care and with childhood illness were the underlying factors of somatization disorder.

In this sample, the frequency of parents' health problems was asked to participants. Participants reported both their own medical diagnosis and for parental diagnosis and parental health complaints.

First of all, the participant was asked to report his/her own health status and medical diagnosis. Out of the total of 282 participants, only 60 participants reported having a medical diagnosis. In addition in the regression analyses participant's own medical diagnosis was found to be one of the most significant factors that predicted likelihood of development of psychosomatic symptoms

This finding can be expected given the fact that some of the medical problems may be considered as psychosomatic symptoms. Those medical symptoms can also be a sign for an individual's proneness to develop psychosomatic symptoms.

Childhood illness may be one underlying factor for psychosomatic illness. Stuart and Noyes (1999) pointed out that childhood illness, through parenting, may have an impact on somatization: If the parents showed "conditional caring" which means that the parent cares the child more when the child got sick than the child was healthy, the parents' response may reinforce the illness behavior.

Moreover, it is more likely for an individual who had already been diagnosed with a medical diagnosis to be more alert for bodily sensations than an individual who do not have a diagnosis. Pennebaker et al. (1987)

talked about the perceptive processes. If a person pays more attention to bodily sensations, he or she will be more awake for that kind of sensation. If the person had already felt physically ill, he or she might be likely to selectively attend more on physical symptoms.

Emotional factors may also play a role. Having a medical diagnosis may have an impact on individual's emotional life. This person may feel anxious and fragile due to the medical problem. The feelings of anxiety and fragility may lead the person to develop psychosomatic symptoms.

To summarize there may be many different factors that explain the strong connection between one's own medical diagnoses and tendency for psychosomatic symptoms- ranging from biological, learning and emotion regulation models. Further in-depth studies would be important to clarify these connections.

In this study participants' parents' past medical diagnoses and their tendency for somatization was also evaluated in connection with participants' psychosomatic symptomatology.

A significant relationship between maternal medical diagnosis and the frequency of participants psychosomatic symptoms was found.; however, there was not a significant relationship between maternal medical diagnosis and the frequency of child's psychosomatic symptoms.

It seems like paternal medical diagnosis, rather than maternal matters. One reason may be that in this sample, paternal death is more than maternal death. Two participants' mothers were died; whereas nine

participants' fathers were died. This is a very small portion of the sample pool. Moreover, regarding medical diagnosis, among the reported medical diagnosis, the fathers were diagnosed with more fetal and chronic problems than mothers. For example, seizures, cancer, disabilities were more common in fathers than mothers. Generally, the reported medical problems for mothers are diabetics and hypertension. In this sample, most of the mothers were housewives, whereas most of the fathers were breadwinners. Those medical problems may have an impact on fathers and that fathers may not work because of the medical problem. Thus, paternal medical problem may have an impact on household income which may increase the level of perceived stress in the family.

According to t-test analyses, it was further found that both mother's and father's tendency to complain from medical illnesses made a difference in terms of participants' tendency towards somatization. Those participants whose mothers or fathers complained frequently while they were children experienced more psychosomatic symptoms.

Moreover, stepwise regression analysis was done to examine the relative power of emotional and familial factors. Based on this stepwise regression analysis, maternal medical complaint was found to be among the factors that was most significantly related with the frequency of psychosomatic symptoms. It means that maternal medical complaint may predict the frequency of the child's psychosomatic symptoms. Paternal medical complaint did not appear in this regression analysis.

The reason may be that the mothers were generally the primary caregiver. If the caregiver had difficulty regulating her own affective states and physical complaints, the caregiver will have difficulties regulating her infant. Thus, the infant, may in turn, have difficulties to regulate own physical sensations. Also, it may be related to social learning of illness behavior. If the child exposed to a parent who had medical complaints, the child may model that parent and may experience those complaints by himself or herself. Also, generally mothers are primary caregivers. Thus, their physical complaint may have more impact on child's frequency of psychosomatic symptoms.

Bialas and Craig (2007) conducted a study with children whose mothers were diagnosed with somatization disorder. In this study, the interaction between children and their mothers was observed. Mothers were divided into three groups: Mothers who were diagnosed with somatization disorder, mothers who were chronically ill and mothers who were healthy. The researchers used both self-measure tests, semi-structured and a meal scene shared with a mother and a child. They found that children whose mother were diagnosed with somatization disorder expressed more "health and safety" needs during the play; whereas they expressed less "health and safety" needs during the meal than the other two group (Bialas & Craig, 2007). Also, mothers expressed more health and safety needs than other mothers and were less responsive to the children. The researchers concluded that the mother-child interaction may be different for those whose mothers were diagnosed with somatization disorder (Bialas & Craig, 2007). This

study pointed out the possible link between somatization and parenting. It seems like the combination of modeling, attachment and affective regulation play a role for psychosomatic behavior.

The link between parental health problems and psychosomatic symptoms may also point out genetics. The child gets his or her genetic from both of his or her parents. One of the reasons may be genetics. But, in this sample, it is impossible to investigate genetic transition from parents to children. The possible genetic link between parental health problems and psychosomatic symptoms can be investigated with further studies.

3. Demographic Factors

In this study, gender and socioeconomic status were found to be significantly related with the frequency of psychosomatic symptoms. Gender and socioeconomic status and their relationships with the frequency of psychosomatic symptoms will be discussed consecutively in detail in the following section.

Age was also asked to participants. The age of the participants in the study was between 18 and 30. The average age was 21. Since the range of age was not large and all the participants were young adults, any effect of age was not expected.

3.1. Gender and Psychosomatic Symptoms

The literature on the epidemiology of psychosomatic symptoms showed that there is a gender difference. For somatization disorder, the

prevalence is 0.2% to 2 % for females and 0.2% for males (APA, 2000). It shows that somatization disorder is more common for females than males. Somatization disorder in DSM is used as a diagnostic category. The ones who do not have eight symptoms do not fulfill the diagnostic criteria. For that reason, it is needed to look for the ones who may have fewer symptoms, but have psychosomatic complaints.

The finding of the relationship between gender and psychosomatic symptoms was in line with the existing literature. It was found that females were more prone to develop psychosomatic symptoms than males. It means that females, between the ages of 18 and 30, suffered more of psychosomatic symptoms, than males. This gender factor was further explored in this study by using regression analysis. It was found that gender was among the most related factors with the frequency of psychosomatic symptoms in this sample.

The existing literature also showed that psychosomatic symptoms are more widespread in female population than males and that gender difference exists. In the literature psychosomatic symtoms have been found to be more common among females in Turkish (Sağduyu,1995 ; Karslı,2008) and Japanese samples (Tamada, 2005). For this population, specifically, it was found that males reported less psychosomatic symptoms than females.

Additional analyses showed that, for females and males, it seems like different emotional factors are involved in the development of psychosomatic symptoms. Two regression analyses that were done

separately for each gender revealed that worry dysregulation was found to be significantly related with the frequency of psychosomatic symptoms for females; whereas sadness inhibition was found to be significantly related with the frequency of psychosomatic symptoms for males. For female participants, worry dysregulation was the emotion regulation strategy that they had most difficulty to regulate. Females who have difficulty to regulate worry were found to be the ones that are more prone to develop psychosomatic symptoms. Worry dysregulation may increase females likelihood to develop psychosomatic symptoms. For males, inhibition was found as significant. It means that in this population, for male participants, sadness inhibition was the emotion regulation strategy that males had most difficulty to regulate. For males, using inhibition of sadness as an emotion regulation strategy may increase their likelihood to develop psychosomatic symptoms. Sadness inhibition may be a risk factor for males to develop psychosomatic symptoms.

In the literature, there were few studies that dealt with the differences in gender regarding the difficulties of psychosomatic symptoms. One of the few papers in Turkey is written by Gökalp (2003) about gender differences regarding the experience of stress. Gökalp (2003) mentioned five domains that women and men experience stress differently: (1) Women and men have different physiological reactions to stress; (2) there is a gender difference in the percentage of stress-related disorders; (3) women and men face with different kinds of stressors; (4) when faced with same stressor, women and men may infer different meanings to that stressor; and

(5) the coping mechanisms to deal with stress can be different for women and men. Based on those differences, the same pattern may be applied to psychosomatic disorders.

First of all, this research was not measure physiological reactions, so it is not possible to discuss it. Secondly, in this sample, female participants have more psychosomatic symptoms than male participants. In this sample, it seemed like women experiences more psychosomatic symptoms and it can be related with the third point that women and men deal with different stressors.

Turkey is a patriarchal country. In Turkey, males are more dominant than females. Males were generally considered as more powerful than females. It could be related to gender roles. In traditional relationships, women generally cannot decide about their bodies and their autonomy was restricted (Gökalp, 2003). This restriction of autonomy and resources may be a source of stress for women. Moreover, women were expected to take care of children, sometimes elderly people of the family and housework (Gökalp, 2003). Even though this sample was composed of university students, those expected roles from women may be a burden for them and can be a source of stress. They may feel trapped.

In Turkey, because of existing gender inequality, women can be considered to live in more stressful life. They were the victims of violence. Under higher levels of stress, women may tend to express psychosomatic symptoms more than males.

In this sample, it is hard to discuss the meaning that women and men give to a stressor; but, for the fifth point that Gökalp (2003) pointed out, it is possible that women and men may cope differently with stressors that. It seems like women were under stress which may lead to dysregulation of worry and to psychosomatic symptoms. The difficulty to cope with anxiety may have them experience more psychosomatic symptoms. Those physical symptoms may be the only way for her to express her inner feelings. The body may speak for the mind (Gubb, 2013).

Secondary gain may be another explanation of this gender difference. When experiencing physical symptoms, women may be taken care of. Thus, it is possible that women only taken care of by other when they have physical symptoms. This, in turn, may lead them to have more physical complaints.

In the literature, the dynamic behind the gender difference of psychosomatic symptoms was not well established. Therefore, it is hard to point out further possible underlying dynamics behind this gender difference.

3.2. Socioeconomic Status and Psychosomatic Symptoms

The relationship between socio-economic status and psychosomatic symptoms has been investigated by many psychologists. Psychosomatic symptoms are more common in individuals who are coming from lower socio-economic status.

In this study, the participants, as determinant of socio-economic status, asked to rate their socio-economic status as low, medium and high. Most of the participants rated their socioeconomic status as medium. This finding cannot be accounted to measure socio-economic status.

Moreover, the participants were asked about maternal and paternal education level. Since the impact of socioeconomic status is mediated through parenting, parenting was thought to matter. Since parental education is an important aspect of a family's socioeconomic status, it was taken as a factor in the analysis.

In this sample, the participants asked to rate both one's mother's and father's level of education. Maternal and paternal education levels were diverse, from elementary to graduate school. In this sample, most of the mothers were educated just for elementary school which was five years of school education. Most of the fathers were educated for at least university degree which was fifteen years of schooling. The gap between mother and father education level exists.

Huuerre et al. (2004) conducted a longitudinal study with healthy population to investigate the relationship with between psychosomatic symptoms and socio-economic status and they found that people who were coming from lower socio-economic status tend to have more psychosomatic symptoms.

The influence of socio-economic status not only studied with healthy population but also with individuals who had psychosomatic disorders.

Schreier and Chen (2013) investigated the influence of socio-economic status with adolescents who were diagnosed with asthma and obesity. They looked for the interaction between socio-economic status and the emergence of psychosomatic symptoms. They found that socio-economic status interacts with the person and its environment like parenting, schooling and neighborhood which determines an individual's psychological health (Schreier & Chen, 2013). Parenting, here, can be considered as a mediator between socio-economic status and the emergence of psychological symptoms. The familial factors will be discussed in the following section.

In this sample, the relationship between socioeconomic status and psychosomatic symptoms was assessed by participant's report of socio-economic status, maternal education level and paternal education level. The findings showed that the only significant main effect was found with regard to mother's level of education. It means that participants whose mothers were less educated experience more psychosomatic symptoms than participants whose mother were more educated. Post-Hoc testes revealed that the significant difference was found between elementary school graduates and university graduates. In other words, children of elementary school graduate mothers reported higher frequency of psychosomatic symptoms than children of university graduate mothers.

Moreover, while maternal education was found to be significant, paternal education was found to be insignificant in relation with psychosomatic symptoms. A possible reason for this is that a mother is generally the primary caregiver for a child. Fonagy et al. (2002) pointed out

that the relationship between the caregiver and the infant and the quality of this relationship shapes the infant's affective world. Since mothers are generally primary caregivers, given the pregnancy, the birth, breast feeding and such, rather than fathers, mothers may be more involved with children. Thus, maternal education may be more influential regarding the infant's proneness to develop psychosomatic symptoms than paternal education.

This finding was also in line with Huerre et al. (2004) and Schreier and Chen (2013) findings. When maternal education was used as a marker of socio-economic status, the participants who were coming from lower socio-economic status tended to have more psychosomatic symptoms.

Schreier and Chen (2013) indicated parenting as a mediator between socio-economic status and psychosomatic symptoms. Based on that, maternal education which can also be considered as a factor of parenting, was also found as significantly related with the frequency of psychosomatic symptoms.

Even though in this research, cross-cultural comparison was not possible, there were several studies that showed that culture may play a role. As a cross-cultural difference, it was found that individuals who live in Middle East region shows higher level of psychosomatic symptoms than the individuals who live in Western world. Ansari et al. (2012) looked at the frequency of psychosomatic symptoms with a university sample in Egypt which is situated near to Turkey. They found that students' in Egypt had more psychosomatic symptoms than students in Western countries (Ansari et al., 2012). In this sample, the possible impact of culture has not been

investigated; but it is worth to mention that culture may have an influence on psychosomatic symptoms as a marker of socio-economic status or through parenting. It may be related to sociological and economic factors of those cultures.

Turkey, like Egypt, is a developing country. The school enrollment for females is less than males. With education, females may access to health care and information about parenting. As in this sample, most of the mothers were graduated from primary school so they have limited education, which may imply that their knowledge is limited. With limited information, it is possible that they may have limited knowledge of appropriate skills for child care.

Rathmann, Ottova, Hurrelman, Looze, Levin, Molcho, Elgar et al. (2015) conducted a cross-cultural study with 27 European and North American countries to investigate macro level determinants of health conditions of adolescents. They considered that socio-economic inequality in a country, by itself, may be related to health inequalities. They found that adolescents who lived counties in which high income inequality exists experience more psychosomatic symptoms than whose lived in countries with low income inequality (Rathmann et al. 2015). Turkey is also a country in which income inequality is high. This may be also a factor considering a macro-level.

4. The relationship among emotion dysregulation, alexithymia and psychosomatic symptoms

As an additional analysis, multiple stepwise regression analysis was done with gender, participant's medical diagnosis, participant's mother's medical diagnosis, participant's father's medical diagnosis, years of maternal education, years of paternal education, alexithymia, worry dysregulation, anger dysregulation, sadness dysregulation, worry inhibition, sadness inhibition and anger inhibition as independent variable and psychosomatic symptoms as dependent variable to explore the determinants that are more related with psychosomatic symptoms. Based on this analysis, alexihymia was found to be the factor that explained the most variance in psychosomatic symptoms factors which was followed by gender, participant's medical diagnosis, worry dysregulation and maternal medical complaints.

Detailed discussions of gender, maternal medical complaints, and participant's own diagnosis were done at the beginning of the discussion chapter.

In fact, according to this regression analysis, for the relationship between emotion regulation and psychosomatic symptoms, alexithymia was found as the factor that was most significantly related with the frequency of psychosomatic symptoms. The difficulty in naming and describing affective experiences and difficulty in discriminating affective experiences, by itself, served as a factor that affected dysregulation of affective experiences. If a person cannot subjectively gives meaning to an experience, the person

cannot think about the incident. Thus, this incident would be processed in a more archaic way, on the soma.

Alexithymia was found to be more related with psychosomatic symptoms than difficulties in emotion dysregulation, in this study. Several studies pointed out the significant relation between alexithymia and psychosomatic symptoms (Güleç et al, 2010; Karşıkaya et al., 2013; Motan & Gençöz, 2007). Alexithymic individuals had difficulty in processing emotion, in a general way (Taylor et al., 1991). They specifically had cognitive processing difficulty. Rather than a situational or periodical dysregulation, alexithymia was considered as like a stable personality factor (Taylor et al., 1991). Those individuals who have high scores of alexithymia generally cannot access their emotions and internal life. The link between emotion and psychic life is limited. This difficulty in identification and description of emotion becomes a limitation which leads difficulties in emotional, cognitive and interpersonal spheres as well. Thus, the impact of alexithymia may be more diverse than difficulty in emotion regulation regarding the constriction. Alexithymia was considered as an affect regulation problem. Affect includes the combination of emotion and the subjective experience of that emotion (Taylor & Bagby, 1997). Thus, alexithymia may infer difficulties both in emotion regulation and in subjective experiences. It may be one of the reasons behind the development of psychosomatic symptoms in alexithymic individuals.

Secondly, worry dysregulation was found to be the fourth most related factor with psychosomatic symptoms. It means that when a person

cannot regulate the intensity and the amount of worry experiences, the person again starts to experience this emotion on physical level. The person cannot contain worry so that the worry tries to be contained on the body.

Based on those results, it seems like both alexithymia and worry dysregulation increased the likelihood to experience psychosomatic symptoms.

5. Summary, Strengths, Limitations and Future Directions

The aim of this study was to explore the familial and emotional factors that are related with frequency of psychosomatic symptoms with a healthy population. This study's importance was to investigate demographic, familial, and emotional factors and their relation with psychosomatic symptoms in a healthy population. This study pointed out the possible relationship of emotional factors together with demographic and familial factors with psychosomatic symptoms. By doing so, it makes it possible to make inferences about the interaction between familial, demographic and emotional factors. Moreover, this study investigated the usage of different emotion regulation strategies with different emotions. It makes possible to point out which strategy and which emotion played greater role on the development of psychosomatic symptoms. The strength of this study was to identify emotional factors that were more related with psychosomatic symptoms. Despite these strengths, because correlational analysis was used, it is impossible to infer causality and directionality. Even though meaningful relationships were found between psychosomatic

symptoms and emotional factors, the problem of direction exist. One cannot infer causality based on those findings. For future research, experimental designs may be used to establish causality.

Regarding the sample, the sample was composed of 282 undergraduate students in Turkey. The aim of this study was to investigate psychosomatic symptoms with a healthy population. This was the reason to collect the data from university students. The sample was large and the gender was distributed proportionately. The participants were coming from different universities and different majors. The gender distribution was also established. It is one of the strengths of this study. This study pointed out emotional and familial factors and their relationship with psychosomatic symptoms in Turkey. It is important, because studies on psychosomatic symptoms from Middle-East was were few.

In this sample, it was found that even healthy and young individuals may have psychosomatic symptoms. The data collection was based on self-report. This is one of the limitations of this study. The participants may not report their actual situation. For future research, a clinician may also assess the participant's emotional and physical status.

Regarding the methodology, Toronto Alexithymia Scale (TAS-20), Parental Emotion Management Scale (PEMS), Somatization Scale (SS) were used to measure the variables. PEMS and SS were first used in Aydın's and Dülgerler's master theses. This study extends their findings. It makes contribution for psychological measures and to establish their reliability. One of the limitations regarding methodology is that the

reliability of the subscales of PEMS, as in original study and Turkish translation, was lower than ideal. One of the reasons may be that the subscales were composed of few questions. Moreover, in this sample, the positive correlations between the strategies of healthy coping and inhibition suggest that PEMS may not be adequately differentiating these two concepts.

Gender difference was found to be one of the major significant factors regarding the frequency of psychosomatic symptoms. Gender appeared to be an important factor regarding psychosomatic symptoms. Psychological and sociological factors may have a role regarding gender difference in psychosomatic symptoms. The dynamics underlying gender difference in psychosomatic symptoms can be elaborated with further studies.

Finally, despite several limitations, this study highlighted the emotional and familial factors on psychosomatic symptoms in Turkey. It pointed out the current status of undergraduate students in Turkey. It is important to get insight about emotional and physical status of young adults. Moreover, this study pointed out emotional factors in relationship with psychosomatic symptoms. Future research may explore the mechanisms through which family factors, individual level emotion regulation strategies and demographic factors such as gender and education level are connected.

REFERENCES

Amerikan Psikiyatri Birliği (2000*). Psikiyatride Hastalıkların Tanımlanması ve Sınıflandırılması Elkitabı, Yeniden Gözden Geçirilmiş Baskı(DSM-IV-TR),* Washighton DC.

Ansari, W. E., Labeeb, S., Moseley, L., Kotb, S., & El-Houfy, A. (2012). Physical and psychological well-being of university students: Survey of eleven faculties in egypt. *International Journal of Preventive Medicine,* 4 (3), 293-310.

Aydın, F (2010). *Maternal emotion regulation, socio-economic status and social context as predictors of maternal emotion socialization practices.* (Unpublished master dissertation). İstanbul Bilgi University, İstanbul.

Begley, T. (1994). Expressed and suppressed anger as predictors of health complaints. *Journal of Organizational Behavior*, 15, 503-516.

Bialas, I., Craig, T. K. J. (2007). "Needs expressed" and "offers of care": an observational study of mothers with somatization disorder and their children. Journal of Child Psychology and Psychiatry, 48: 1, 97-104.

Buetel, M. E., Bleichner, F. B., Heymann, F., & Tritt, K. (2011). Inpatients psychosomatic treatment of anxiety disorders: Comorbities, predictors and outcomes. *International Journal of Clinical and Health Psychology,* 11, 443-457.

Boratav-Bolak, H., Sunar, D., & Ataca, B. (2011) Duyguları Sergileme

Kuralları ve Bağlamsal Belirleyicileri: Türkiye'de Üniversite Öğrencileri ile Yapılan bir Araştırma. *Türk Psikoloji Dergisi,* 90-101.

Borkovec, D. B., Roemer, L., Kinyon, J. (1995). In Pennebaker, J. (Ed.), *Emotion, disclosure, and health* (47-70). Washington D.C.: American Psychological Association.

Bozkurt Zincir, S., Sunbul, M., Aydın Sunbul, E., Dalkılıç, B. Cengiz, F. Kıvrak, T. & Durmuş, E. (2014). Evaluation of alexithymia, somatosensory sensitivity and health anxiety levels in patients with noncardiac chest pain. *Biomed Research International, doi:1*0.1155/2014/896183.

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

Cole, P. Michel, M., O'Donnell Teti, L. (1994). The development of emotion regulation and dysregulation: A clinical perspective. In N. Fox (Eds.), The development of emotion regulation: Behavioral and biological considerations. *Monographs of Society for Research in Child Development,* 59, 73-100.

Craig, T.K., Boardman, A. P., Mills, K. , Daly-Jones, O. , Drake, H. (1993). The south London somatization study I: Longitudinal course and the influence of the early life experiences. British Journal of Psychiatry, 163: 579-588.

Dodge, K. and Garber, J. (1991). Domains of emotion regulation. In

Garber, J. &Dodge, K.(Eds.), *The development of emotion regulation and dysregulation,* 3-12, New York: Cambridge University Press.

Durand, M. & Barlow, D. (2010) *Essential of Abnormal Psychology.* Wadsworth Cengage Learning, Belmont: USA:

Dülgerler, Ş. (2000). *İlköğretim okulu öğretmenlerinde somatizasyon ölçeği geçerlik ve güvenirlik çalışması.* (Unpublished master dissertation). Ege University, İzmir.

Gökalp, P. G. (2003). Stres, anksiyete ve kadın. In Akın, A (Eds.) *Toplumsal cinsiyet, sağlık ve kadın, 165-173,* Hacettepe Üniversitesi Yayınları: Ankara.

Gubb, K. (2013). Psychosomatics today: A review of contemporary theory and practice. *Psychoanalytical Review,* 100, 103-142.

Güleç, H., Köse, S., Güleç, M.Y., Çitak, S., Evren, C., Borckardt, J. & Sayar, K. (2009). Reliability and factorial validity of the Turkish version of the 20-item Toronto alexithymia scale (TAS-20). *Klinik Psikofarmokoloji Bülteni,* 19 (3), 214-220).

Fonagy, P., Gergely, G., Jurist, E. L., Target, M. (2002). Affect regulation, mentalization and the development of the self. New York: Other Press.

Huuerre, T. , Rahkonen, O., Komulainen, E., & Aro, H. (2004). Socioeconomic status as a cause and consequence of psychosomatic symptoms from adolescence to adulthood. *Social Psychiatry and Psychiatric Epidemiology,* 40, 580-587.

İkiz, T. (2012). Türkçe Basıma Önsöz. In Marty, P. *Zihinselleştirme ve*

psikosomatik. (Elif Yavuz Sever, Trans.). İstanbul: Bağlam Yayıncılık (Orginal work published in 1998).

Karslı, E. (2008). *Kişilerarası tarz, kendilik algısı, öfke ve psikosomatik bozukluklar.* (Unpublished master dissertation). Ankara University: Ankara.

Karşıkaya, S., Kavakcı, Ö. Kuğu, N., Güler, A. (2013). Migren hastalarında travma sonrası stress bozukluğu: Migren, travma ve aleksitimi. *Nöropsikiyatri Arşivi,* 50, 263-268.

Kaya, E., Erden, D., Kayar, A. H., Kıralp, M. Z. (2010) Fibromiyalji sendromu olan kadın hastalarda aleksitimi, mizaç ve karakter özellikleri. Türkite Fiziksel Tıp ve Rehabilitasyon Dergisi, 56, 105-110.

Kök, M. (2014). Self-perception in individuals with psychosomatic disorder, style and anger status in interpersonal relationships in the context of personal responsibility. *International Journal of Academic Research,* 6, 2, 115-126.

Krystal, H. (1974). The genetic development of affects and affect regression. Annuals of Psychoanalysis, 2, 98-126.

Lazarus, R. S. (1994). *Emotion and adaptation.* New York: Oxford University Press.

Lipowski, J. W. (1990). Somatization and depression. Psychosomatics: Journal of Consultation and Liaison Psychiatry, 13, 13-21.

McDougall, J. (1974). The psychosoma and the psychoanalytic process.

International Review of Psycho-Analysis, 1, 437-459.

McDougall, J. (1989). *Theaters of the body.* New York: Norton & Company.

Marty, P. (2012). *Zihinselleştirme ve psikosomatik.* (Elif Yavuz Sever, Trans.). İstanbul: Bağlam Yayıncılık (Orginal work published in 1998).

McKinley, J. C, & Hathaway, S. R. (1940). A multiphasic personality schedule (Minnesota): II. A differential study of hypochondriasis. Journal of Psychology, 10,255-268

Meissner, W. W. (2006). Psychoanalysis and the mind-body relation: Psychosomatic Perspectives. *Bulletin of the Menninger Clinic,* 70 (4), 295-315.

Motan, İ., Gençöz, T. (2007). Aleksitimi boyutlarının depresyon ve anksiyete belirtileriyle ilişkileri. Türk Psikiyatri Dergisi, 18 (4), 333-343.

Pandey, R., & Choubey, A. K. Emotion and health: An overview. *SIS Journal of Projective Psychology and Mental Health,* 17, 135-152.

Pennebaker, J. Hugher, C. F., O'Heeron, C. (1987). The psychophysiology of confession: Linking inhibitory and psychosomatic processes. *Journal of Personality and Social Psychology,* 52 (4), 781-793.

Pennebaker, J., Kiecolt-Graser, J. K., Graser, R. (1988). Disclosure of traumas and immune function: health implications for psychotherapy. *Journal of Consulting and Clinical Psychology,* 56, 2, 236-245.

Pennebaker, J. (1982). *The psychology of physical symptoms.* New York: Springer-Verlag.

Pennebaker, J. (1995). Emotion, disclosure and health: An overview. In Pennebaker, J. (Ed.),*Emotion, disclosure, and health* (3-8). Washington D.C.: American Psychological Association.

Pennebaker, J. (2000). Psyhological factors influencing the reporting of physical symptoms. In Stone, A. A., Turkkan, J. S., Bachrach, C. A., Jobe, J. B., Kurtzman, H. S., Cain, V. S. (Eds). The science of self report: Implication for research and practice (299-215). Mahvah, New Jersey: Lawrence Erlbaum Associates.

Rathmann, K., Ottova, V. Hurrelmann, K., de Looze, M., Levin, K., Molcho, M., Elgar, F., Gabhainn, S. N., van Dijki, J. P., Richter, M. (2015). Macro-level determinants of young people's subjective health and health inequalities: A multilevel analysis in 27 welfare states. Maturitas, 80, 414-420.

Rugancı, N. R. (2008). *The relationship among attachment style, affect regulation, psychological distress and the mental construct of the relational world* (Unpublished doctoral dissertation). Middle East Technical University, Ankara.

Ruthig, J. C., Marrone, S., Hladkyj, S., Robinson-Epp, N. (2011). Changes in college student health: Implications for academic performance. Journal of College Student Developments, 52, 3, 307-320.

Schreier, H. M. C., & Chen, E. (2913). Socioeconomic status and health of

youth: A multilevel, multidomain approach to conceptualizing pathways. *Psychological Bulletin,* 139, 3, 606-654.

Schur, M. (1955) Comments on the metapsychology of somatization. *Psychoanalytic Study of Children,* 10, 110-164.

Stuart, S., Noyes, R. (1999). Attachment, and interpersonal communication in somatization. Psychosomatics, 40: 1, 34-43.

Suveg, C. (2003). Emotion management in children with anxiety disorders: A focus on the role of emotion-related socialization processes. Unpublished thesis, The University of Maine, Orono, USA.

Sağduyu, A. (1995). Sağlık ocağına başvuran hastalarda somatizasyon, *Psikiyatri Dergisi,* 6 (1).

Şahin, H. Öfke ve ödke denetiminin kuramsal temelleri. *Burdur Eğitim Fakültesi Dergisi.*

Tamada, T. (2005). The influence of sex differences and social environment on the occurrence of psychosomatic disorders. *Journal of Psychosomatic Obstetrics and Gynecology,* 26, 1.

Taylor, G. J., Bagby, R. M., Parker, M. A. (1991). The Alexithymia Construct: A potential paradigm for psychosomatic research. *Psychosomatics,* 32, (2), 153-164.

Taylor, G.J. , Bagby, M., Parker, J. (1997). The development and regulation of affects, In Taylor, G. J., Bagby, M., Parker, J., *Disorders of affect regulation: Alexithymia in medical and psychiatric illness.* Cambridge: Cambridge University Press.

Taylor, G. J. (2003) Somatization and conversion: Distinct and overlapping

constructs?. *Journal of American Academy of Psychoanalysis,* 487-508.

Vaez, M., Kristenson, M., & Laflamme, L. (2004). Perceived quality of life and self-rated health among first-year university students: A comparison with their working peers. *Social Indicators Research,* 68, 221-234.

Vindel, A., Fernandez, J. C. & Spielberger, C. D. (2012). The experience and expression of anger and anxiety in bronchial asthma patients, *Ansiedad Y Estes,* 18, 221-230.

Vitale, S., Sperduto, R. D., Frederick, L. (2009) Increased prevalence of myopia in the united states between 1971-1972 and 199-2004. *Achieves of Ophthalmology,* 127, 1632-1639.

Warren, J. R. (2009). Socioeconomic status and health across the life course: A test of the social causation and health selection hypotheses. *Social Forces,* 87, 4, 2125-2154.

Wong, J., & Fong, D. Anxiety mediates the impact of stress on psychosomatic symptoms in chinese. *Psychology, Health and Medicine.*

DOI: 10.1080/13548506.2014.951372.

Yang, Y., Liu, L., Wang, Y., Wu, H., Yang, X.-S., Wang, J.-N., Wang, L. (2013). The prevalence of depression and anxiety among Chinese adults with cancer: A systematic review and meta-analysis. *BMC Cancer,* 13, 393.

Yazıcı-Güleç, M., Hocaoğlu, Ç., Gökçe, M. & Sayar, K. (2007). Kalple

ilişkili olmayan göğüs ağrısında aleksitimi, öfke ve bedensel duyumları büyütme. *Anadolu Psikiyatri Dergisi,* 8, 14-21.

Zeman, J., Shipman, K., & Penza-Clyve, S. (2001). Development and initial validation of the Children's Sadness Management Scale. *Journal* of *Nonverbal Behavior, 25*(3), 187-205.

APPENDIX A: Consent Form

Değerli Katılımcı,

İstanbul Bilgi Üniversitesi klinik psikoloji bölümü yüksek lisans öğrencisi Aslı Özden'in bireylerin duyguları, duygu işleme süreçleri ve bedensel şikâyetleri arasındaki ilişkiyi inceleyen tez çalışmasına katılımınızı rica ediyorum.

Bu çalışmaya 18-30 yaş arasındaki bireyler katılabilir. Bu bireyler yaklaşık 15-20 dakika sürecek olan anket formlarını kendileri dolduracaklardır. Anket formları araştırmacı ile ulaştırılacak ve bir kalem ile doldurulacaktır. Araştırmanın güvenilirliği açısından bütün soruları ara vermeden ve boş bırakmadan bir oturuşta cevaplamanız beklenmektedir. Eğer araştırmaya katılmaya devam etmek istemezseniz, istediğiniz bir yerde çalışmayı bırakma hakkınız vardır.

Katılımcı olarak kimliğiniz gizli kalacaktır. İsim ve soy isminizi sadece onam formunun üstüne imzalarken yazmanız gerekmektedir. Bu form, araştırmanın soru kısmından ayrı olarak dağıtılacaktır ve sonrasında da ayrı olarak saklanacaktır. Araştırmanın başka herhangi bir yerinde isim veya soy isim yazmanız gerekmemektedir. İsim ve soy isminiz araştırmanın hiçbir yerinde kullanılmayacaktır. Bu araştırmadan elde edilen bilgiler grup olarak değerlendirilecektir. Bu çalışmaya katılım gönüllülük esasına dayanmaktadır. Soruların doğru veya yanlış bir cevabı yoktur. Eğer çalışmaya katılmaya gönüllü olursanız lütfen bütün soruları olabildiğince samimi bir şekilde kendi yaşantınız doğrultusunda cevaplamaya çalışın.

Çalışmayla ilgili sorularınız olursa araştırmacı Psk. Aslı Özden'e 533 021 88 14 numaralı telefondan ya da aslozden@gmail.com e-posta adresinden ya da çalışmanın danışmanı olan Dr. Zeynep Çatay'a zeynep.catay@bilgi.edu.tr adresinden veya (212) 311 76 16 numaralı telefondan ulaşabilirsiniz. Araştırmaya katılarak yaptığınız değerli katkı ve ayırdığınız zaman için çok teşekkür ederim.

Araştırmanın şartlarını okudum ve katılmayı kabul ediyorum.
Araştırmanın şartlarını okudum ve katılmayı kabul etmiyorum.

İsim Soyisim
İmza

Psk. Aslı Özden
İstanbul Bilgi Üniversitesi
Klinik Psikoloji Yüksek Lisans Yetişkin Programı Öğrencisi
APPENDIX B: Demographic Form
Demografik Bilgi Formu
Kişisel Bilgiler:
Yaş: ____
Cinsiyet: Kadın ____ Erkek ____
Medeni hal: Bekar ___ Evli____
Dul/Boşanmış___
Okuduğunuz
okul:_____
Okuduğunuz sınıf: _____
Okuduğunuz bölüm: _____
Şu anda kimlerle yaşıyorsunuz?
Anne/baba _____
Eş ve çocuklar _____
Arkadaş/akraba _____
Yalnız _____
Ekonomik durumunuz: Alt___ Orta___
Üst___
Herhangi bir tanı almış sağlık problemimiz var mı? Varsa açıklayınız.
Evet(açıklayınız)_____
_____
Hayır _____
Bu sağlık probleminiz günlük hayatınızı nasıl etkiliyor?
0 (Hiç)___ 1 (Biraz) _____ 2 (çok) ____
Aile Bilgileri:
Anneniz: Sağ ____ Vefat etti (yaşı): ____
Anneniz sağ ise kaç yaşında? ___
Anneniz vefat ettiğinde kaç yaşındaydınız? ___
Annenizin eğitim durumu: _____
Babanız: Sağ ____ Vefat etti (yaşı): ____
Babanız sağ ise kaç yaşında? ___
Babanız vefat ettiğinde kaç yaşındaydınız? ____
Babanızın eğitim durumu: _____
Annenizin bilinen bir sağlık sorunu var mı?
Evet (açıklayınız) _____
Hayır_____
Bu sağlık problemi annenizin günlük hayatını nasıl etkiliyor?
0 (Hiç) _____ 1 (Biraz) _____ 2 (çok) _____
Çocukluk ve gençlik yıllarını düşündüğünüzde annenizin önemli bir sağlık sorunu var mıydı?
Evet (açıklayınız) _____
Hayır ____
Bu sağlık sorunu günlük hayatını nasıl etkilerdi?

0 (Hiç) ____ 1 (Biraz) ____ 2 (çok) ____

Anneniz siz çocukluk ve gençlik yıllarındayken sıklıkla fiziksel sorunlardan (baş ağrısı, mide ağrısı, halsizlik, kalp çarpıntısı, uyuşma gibi) şikayet eder miydi?

0 (hemen hemen hiç) ____ 1 (ara ara)____ 2(sıklıkla) ___

Babanızın bilinen bir sağlık sorunu var mı?

Evet

(açıklayınız)_____

Hayır _____

Bu sağlık problemi babanızın günlük hayatını nasıl etkiliyor?

0 (Hiç) _____ 1 (Biraz) _____ 2 (çok) _____

Çocukluk ve gençlik yıllarını düşündüğünüzde babanızın önemli bir sağlık sorunu var mıydı?

Evet (açıklayınız) _____

Hayır _____

Bu sağlık sorunu babanızın günlük hayatını nasıl etkilerdi?

0 (Hiç)_____ 1 (Biraz) _____ 2 (çok) ____

Babanız siz çocukluk ve gençlik yıllarındayken sıklıkla fiziksel sorunlardan (baş ağrısı, mide ağrısı, halsizlik, kalp çarpıntısı, uyuşma gibi) şikâyet eder miydi?

0 (hemen hemen hiç) ____ 1 (ara ara) ____ 2(sıklıkla)_____

APPENDIX C: Parental Emotion Management Scale (PEMS)

Lütfen aşağıda belirtilen değişik duygu ve durumları hangi sıklıkta yaşadığınızı size uyan dereceyi yuvarlak içine alarak belirtiniz.

Üzüntü

1. Ağlamamı ve üzüntümü kontrol edebilirim.	Neredeyse hiç 1	Bazen 2	Sık sık 3
2. Üzüntümü içimde tutarım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
3. Sakin dururum ve üzücü şeylerin beni rahatsız etmesine izin vermem.	Neredeyse hiç 1	Bazen 2	Sık sık 3
4. Beni üzen şeylerden şikayet ederim/ yakınırım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
5. Üzüntümü gizlerim.	Neredeyse hiç 1	Bazen 2	Sık sık 3
6. Sakinleşene kadar tamamen farklı bir şey yaparım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
7. Üzülürüm; ama bunu göstermem.	Neredeyse hiç 1	Bazen 2	Sık sık 3
8. Üzüntülü duygularımın kontrolünü kaybetmeyi engelleyebilirim.	Neredeyse hiç 1	Bazen 2	Sık sık 3
9. Üzgün olduğumda ağlarım ve bağırır çağırırım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
10. Beni üzen her neyse sakince üstesinden gelmeye çalışırım.	Neredeyse hiç 1	Bazen 2	Sık sık 3

11. Üzgün olduğumda evi temizlemek gibi şeyler yaparım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
12. Üzüntümü göstermekten korkarım.	Neredeyse hiç 1	Bazen 2	Sık sık 3

Öfke

1. Öfkeli hissettiğim zaman asabiliğimi kontrol edebilirim.	Neredeyse hiç 1	Bazen 2	Sık sık 3
2. Öfkemi içimde tutarım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
3. Öfkeli hissettiğim zaman sakin dururum ve soğukkanlılığımı korurum.	Neredeyse hiç 1	Bazen 2	Sık sık 3
4. Öfkelendiğimde kapıları çarpmak gibi şeyler yaparım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
5. Öfkemi gizlerim.	Neredeyse hiç 1	Bazen 2	Sık sık 3
6. Beni sinirlendiren her ne ise onunla yüzleşirim.	Neredeyse hiç 1	Bazen 2	Sık sık 3
7. Deliye dönerim; ama bunu belli etmem.	Neredeyse hiç 1	Bazen 2	Sık sık 3
8. Öfkelendiğimde kendimi kaybetmemeyi başarırım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
9. Öfkelendiğimde bayağı şeyler söylerim.	Neredeyse hiç 1	Bazen 2	Sık sık 3
10. Sorunu sakinlikle çözmeye, halletmeye çalışırım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
11. Öfkemi göstermekten korkarım.	Neredeyse hiç 1	Bazen 2	Sık sık 3

Kaygı

1. Endişeli duygularımın kontrolünü kaybetmeyi engelleyebilirim.	Neredeyse hiç 1	Bazen 2	Sık sık 3
2. Endişeli olduğumda bunu belli ederim.	Neredeyse hiç 1	Bazen 2	Sık sık 3
3. Endişeli duygularımı içimde tutarım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
4. Endişeli olduğum zaman kendimi daha iyi hissedene kadar birisiyle konuşurum.	Neredeyse hiç 1	Bazen 2	Sık sık 3
5. Kaygılı olduğumda ağlamak ve bağırıp çağırmak gibi şeyler yaparım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
6. Endişeli hislerimi saklarım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
7. Endişeli hissettiğim zaman sakin dururum.	Neredeyse hiç 1	Bazen 2	Sık sık 3
8. Beni endişelendiren her neyse ondan kaçınırım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
9. Endişelenerim; ama bunu göstermem.	Neredeyse hiç 1	Bazen 2	Sık sık 3
10. Endişelendiğimde, sakinleşene kadar tamamen farklı bir şey yaparım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
11. Ne kadar endişeli olduğuma dair yakınmayı sürdürürüm.	Neredeyse hiç 1	Bazen 2	Sık sık 3
12. Gerçekten kaygılanmış davranmamı engelleyebilirim.	Neredeyse hiç 1	Bazen 2	Sık sık 3
13. Endişelendiğimde sorunu sakinlikle halletmeye çalışırım.	Neredeyse hiç 1	Bazen 2	Sık sık 3

14. Kaygılandığımda ağlarım ve bağırıp çağırırım.	Neredeyse hiç 1	Bazen 2	Sık sık 3
15. Endişeli hislerimi göstermekten korkarım.	Neredeyse hiç 1	Bazen 2	Sık sık 3

APPENDIX D: Toronto Alexithymia Scale (TAS-20)

Lütfen aşağıdaki maddelerin sizi ne ölçüde tanımladığını işaretleyiniz. İşaretlemek için durumunuza karşılık gelen rakamı yuvarlak içine alınız. Hiçbir zaman (1),....., Her zaman (5) olacak şekilde bu maddelere puan veriniz.

Hiçbir zaman (1) Nadiren (2) Bazen (3) Sık sık (4) Her zaman (5)

1. Ne hissettiğimi çoğu kez tam olarak bilemem. 1 2 3 4 5
2. Duygularım için uygun kelimeleri bulmak benim icin zordur. 1 2 3 4 5
3. Bedenimde doktorların bile anlamadığı duyumlar oluyor. 1 2 3 4 5
4. Duygularımı kolayca tanımlayabilirim. 1 2 3 4 5
5. Sorunları yalnızca tanımlamaktansa onları çözümlemeyi yeğlerim. 1 2 3 4 5
6. Keyfim kaçtığında, üzgün mü, korkmuş mu yoksa kızgın mı olduğumu bilemem. 1 2 3 4 5
7. Bedenimdeki duyumlar çoğu kez kafamı karıştırır. 1 2 3 4 5
8. Neden öyle sonuçlandığını anlamaya çalışmaksızın, işleri oluruna bırakmayı yeğlerim 1 2 3 4 5
9. Tam olarak tanımlayamadığım duygularım var. 1 2 3 4 5
10. İnsanların duygularını tanıması zorunludur. 1 2 3 4 5
11. İnsanlar hakkında ne hissettiğimi tanımlamak benim icin zordur. 1 2 3 4 5
12. İnsanlar duygularım hakkında daha cok konuşmamı isterler.
13. İçimde ne olup bittiğini bilmiyorum. 1 2 3 4 5
14. Çoğu zaman neden öfkeli olduğumu bilmem. 1 2 3 4 5
15. İnsanlarla, duygularından çok günlük uğraşları hakkında konuşmayı yeğlerim. 1 2 3 4 5
16. Psikolojik dramalar yerine eğlence programları izlemeyi yeğlerim. 1 2 3 4 5
17. İçimdeki duyguları yakın arkadaşlarıma bile açıklamak bana zor gelir. 1 2 3 4 5
18. Sessizlik anlarında bile kendimi birisine yakın hissedebilirim. 1 2 3 4 5
19. Kişisel sorunlarımı çözerken duygularımı incelemeyi yararlı bulurum. 1 2 3 4 5
20. Film ya da tiyatro oyunlarında gizli anlamlar aramak, onlardan alınacak hazzı azaltır. 1 2 3 4 5

APPENDIX E: Somatization Scale (SS)

Somatizasyon Ölçeği

Bu formda sıra ile numaralandırmış bazı sorular bulacaksınız. Her soruyu okuyarak kendi durumunuza göre **DOĞRU** ya da **YANLIŞ** olup olmadığına karar verin. Bu soruları sadece kendinizi düşünerek yanıtlayın.

Bu sorular birbirinin aynısı ya da tam tersi gibi gelebilir. Mümkünse bütün soruları cevaplandırmaya çalışın.

1. Çoğu zaman boğazım tıkanır gibi olur.	Doğru	Yanlış
2. İştahım iyidir.	Doğru	Yanlış
3. Başım pek az ağrır.	Doğru	Yanlış
4. Ayda bir iki defa ishal olurum.	Doğru	Yanlış
5. Midemden oldukça rahatsızım.	Doğru	Yanlış
6. Çoğu kez midem ekşir.	Doğru	Yanlış
7. Bazen utanınca çok terlerim.	Doğru	Yanlış
8. Sağlığım beni pek kaygılandırmaz.	Doğru	Yanlış
9. Hemen hemen hiçbir ağrım ve sızım yoktur.	Doğru	Yanlış
10. Bazen başımda sızı hissederim.	Doğru	Yanlış
11. Çoğu zaman başımın her tarafı ağrır.	Doğru	Yanlış
12. Sağlığım birçok arkadaşımınki kadar iyidir.	Doğru	Yanlış
13. Pek seyrek kabız olurum.	Doğru	Yanlış
14. Ensemde nadiren ağrı hissederim.	Doğru	Yanlış
15. Vücudumda pek az seğirme ve kasılma olur.	Doğru	Yanlış
16. Çabucak yorulmam.	Doğru	Yanlış
17. Pek az başım döner ya da hiç dönmez.	Doğru	Yanlış
18. Yürürken dengemi hemen hemen hiç kaybetmem.	Doğru	Yanlış
19. Soğuk günlerde bile kolayca terlerim.	Doğru	Yanlış
20. Çoğu zaman yorgunluk hissederim.	Doğru	Yanlış
21. Hemen her gün mide ağrılarından rahatsız olurum.	Doğru	Yanlış
22. Tekrarlanan mide bulantısı ve kusmalar bana rahatsızlık verir.	Doğru	Yanlış
23. Çoğu zaman bütün vücudumda bir halsizlik duyarım.	Doğru	Yanlış
24. Son birkaç yıl içinde sağlığım çoğu zaman iyiydi.	Doğru	Yanlış
25. Çoğu defa sabahları dinç ve dinlemiş uyanırım.	Doğru	Yanlış
26. Çoğu zaman bana kafam şişmiş ya da burnum tıkanmış gibi gelir.	Doğru	Yanlış
27. Çoğu zaman balım sıkı bir çember içindeymiş gibi hissederim.	Doğru	Yanlış
28. Kalp ve göğüs ağrılarından hemen hemen hiç şikayetim yoktur.	Doğru	Yanlış
29. Hayatımda hiçbir zaman kendimi şimdiki kadar İyi hissetmedim.	Doğru	Yanlış

30. Kalbimin hızlı çarptığını hemen hemen hiç hissetmem ve çok seyrek nefesim tıkanır. Doğru Yanlış

31. Hiç felç geçirmedim ya da kaslarımda olağanüstü bir halsizlik duymadım. Doğru Yanlış

32. Ortada hiçbir neden yokken haftada bir ya da daha sık birdenbire her yanımı ateş basar. Doğru Yanlış

33. Vücudumun bazı yerlerinde çok defa yanma, gıdıklanma, karıncalanma ve uyuşukluk hissederim. Doğru Yanlış