

**RELIABILITY AND VALIDITY OF EXPANDED
VERSION OF INVENTORY OF DEPRESSION
AND ANXIETY SYMPTOMS (IDAS-II) IN
TURKISH CULTURE**

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ISTANBUL, 2014

RELIABILITY AND VALIDITY OF EXPANDED VERSION OF INVENTORY
OF DEPRESSION AND ANXIETY SYMPTOMS (IDAS-II) IN TURKISH
CULTURE

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF SOCIAL SCIENCES
OF
BAHÇEŞEHİR UNIVERSITY

BY

ECE ORAL ALBAYRAK

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF ARTS
IN
THE DEPARTMENT OF CLINICAL PSYCHOLOGY

JUNE 2014

THE REPUBLIC OF TURKEY
BAHCESEHIR UNIVERSITY

GRADUATE SCHOOL OF SOCIAL SCIENCES
CLINICAL PSYCHOLOGY

Name of the thesis: Reliability and Validity of Expanded Version of
Inventory of Depression and Anxiety symptoms (IDAS-II) in Turkish Culture

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Date of the Defense of Thesis: 18.07.2014

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ABSTRACT

RELIABILITY AND VALIDITY OF EXPANDED VERSION OF INVENTORY OF DEPRESSION AND ANXIETY SYMPTOMS (IDAS-II) IN TURKISH CULTURE

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July 2014, 114 pages

The present study examined psychometric properties of ‘Inventory of Depression and Anxiety Symptoms-II (IDAS-II)’ in Turkish culture. IDAS-II aims to assess depressive and anxiety symptoms as well as symptoms of bipolar disorder. Sample of the current study consisted of healthy controls ($N= 713$) and outpatients ($N= 208$). Principle component extraction with promax rotation yielded a solution that was similar to original factor structure of IDAS-II. IDAS-II revealed three factors and eighteen interpretable subscales that capture different symptom dimensions of targeted disorder in Turkish culture. IDAS-II revealed high level of internal consistency and significant retest correlations in general and established sensitivity due to change over time. IDAS-II also established good convergent and discriminant

validity in relation to Beck Depression Inventory, Beck Anxiety Inventory, Mood Disorder Questionnaire, Maudsley Obsessive Compulsive Inventory, Panic Agoraphobia Scale and Post Traumatic Stress Disorder Check List-Civilian Version. IDAS-II subscales significantly differentiated healthy controls from outpatients. In addition, the effect of demographic variables such as gender, marital status, education, perceived level of income, work status on IDAS-II subscales were also examined. Results showed that demographic variables had an effect on various IDAS-II Scales. Consequently, all reliability and validity analyses indicated that the Turkish form of IDAS-II showed acceptable psychometric skills.

Keywords: Inventory of Depression and Anxiety Symptoms, IDAS-II, depression, anxiety bipolar disorder, factor analysis, obsessive-compulsive disorder, posttraumatic stress disorder, claustrophobia

ÖZET

DEPRESYON VE KAYGI BELİRTİLERİ ENVANTERİ'NİN İKİNCİ SÜRÜMÜNÜN TÜRKÇE UYARLAMASI VE PSİKOMETRİK ÖZELLİKLERİ

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Tez Yöneticisi: Doç. Dr. Metehan Irak

Temmuz 2014, 114 sayfa

Bu çalışma, Depresyon ve Kaygı Belirtileri Envanteri'nin ikinci sürümünün (DEKB-II; Inventory of Depression and Anxiety Symptoms-II) Türk kültüründeki psikometrik özelliklerinin belirlenmesini amaçlamaktadır. DKBE-II, depresyon ve anksiyete belirtileri ile bipolar bozukluk belirtilerini birlikte değerlendirmeyi hedeflemektedir. Çalışmanın örneklemini sağlıklı kontrol grubundan ($N= 713$) ve ayakta tedavi gören hasta grubundan ($N= 208$) oluşturmuştur. Temel bileşenler analizi sonuçları, DKBE'nin Türkçe Formu'nun orijinal formun faktör yapısına oldukça benzeyen bir yapısı olduğunu göstermiştir. Buna göre, DKBE-II üç faktör ve 18 yorumlanabilir alt ölçekten oluşmuştur. Güvenirlik analizleri DKBE-II'nin iç tutarlılığının oldukça yüksek olduğunu; envanterin zaman içindeki değişime duyarlı olmakla beraber test-tekrar test güvenirliliğinin iyi olduğunu göstermiştir. DKBE-

II'nin yapı ve ayırt edici geçerliliği Beck Depresyon Ölçeği, Beck Anksiyete Ölçeği, Duygudurum Bozuklukları Ölçeği, Maudsley Obsesif Kompulsif Soru Listesi ve Travma Sonrası Stres Bozukluğu Kontrol Listesi- Sivil Versiyonu ile değerlendirilmiş, ölçeğin yapı ve ayırt edici geçerliliğinin iyi olduğu ortaya konmuştur. Sağlıklı kontrol grubu ile hasta grubunun karşılaştırılması, iki grubun alt ölçekler bazında anlamlı derecede farklı puanlara sahip olduğunu ortaya koymuştur. Ayrıca cinsiyet, medeni durum, eğitim düzeyi, çalışma durumu ve algılanan gelir düzeyinin alt ölçekler üzerindeki etkisi incelenmiştir. Demografik değişkenlerin DKBE-II 'nin çeşitli alt ölçekleri üzerinde etkileri olduğu ortaya konmuştur. Sonuç olarak DKBE-II'nin Türkçe Formu'nun yeterli psikometrik özelliklere sahip olduğu görülmüştür.

AnahtarKelimeler: Depresyon ve Kaygı Belirtileri Envanteri, depresyon, kaygı, bipolar bozukluk, obsesif kompulsif bozukluk, travma sonrası stres bozukluğu, klostrofobi, geçerlik ve güvenilirlik

*To my family and
my husband*

ACKNOWLEDGEMENTS

I am very glad to write these lines because this means that I am at the end of the long and a hard journey. And it is time to express my gratitude to people who supported me in this journey.

First, I want to express my gratitude to my thesis supervisor Assoc. Prof. Metehan Irak for his rigorous work, support and guidance. Beyond all, I thank him that I have learned how to work meticulously in this process. I am very grateful that he believed in me from the beginning to the end of the current study. With the motivation and support I received from him, I was able to carry on.

Also I would like to express my special thanks to Assist. Prof. Doruk Uysal Irak for her great support. Beyond being a committee member, she accepted my questions with patience and shared her experience and knowledge every time I needed. I also want to thank to Prof. Gökhan Malkoç for his valuable feedback and contributions. He motivated me to make further researches with his enthusiasm.

I would like express my gratitude to Dr. Mia Medina and Assoc. Prof. Yeşim Korkut that I have learned the principles of clinical psychology. Also, I want to express my special thanks to Dr. Nur Yeniçeri for her support and kindness. I also want to offer my gratitude to Assoc. Prof. Ejder Akgün Yıldırım and Dr. Münevver Hacıoğlu since they provide me to collect data in one of the biggest mental disorder

hospital in Turkey. I appreciate their support and kindness. Also I want to thank to Assoc. Prof. Banu Yılmaz, Assist. Prof. Ekrem Düzen, Ebru McCallum and Saadet Tıkaç for their great contributions to current study. I also want to thank Dr. Ayşe Ceren Korulsan, Dr. Tamer Atalay, Psychologist Süleyman Demir and Psychologist Şeyma Kama for their contributions in data collection process.

I want to mention that I am very grateful to be a member of Arkabahçe Psychological Counseling and Training Center. I express my special thanks to Dr. Olcay Güner, Psychologist Nur Dinçer Genç, Psychologist Büşra Tarçalır and Engin Çıkrıkçı for their support in this long journey.

I am very grateful that I have great friends that make my life easier and more meaningful. My special thanks to Beyza Gürsun, Aslı Kayık and Çağlar Metin. I believe that they wanted me to be a clinical psychologist as much as I did for myself. I felt their great support from the beginning to the end of this process. I also thank to Enis Ergin, Ahmet Yılmaztekin, Akın Aksoy and Seda Ertürk for their positivity, support and humor that made this process easier and joyful for me. I am very thankful to my colleagues and friends Begüm Ayşegül Aydınoglu and Sena Cüre. In this process they made me feel that I am not alone and they were always ready for help every time when I needed them.

And I offer my special and lovely thanks to my mom, dad and my brother. I felt their love and support through my entire life. They believed in me and so that I learned to believe in myself. And this belief brought me today. They always encouraged my desire to study. I am aware of how they strived hard for me to get

this degree and I appreciate it. There are not enough words that can thank them for what they have done for me. I also thank to my borther's wife and my little nephew for bringing joy into my life. Their endless love and support made my work and my life more meaningful.

And finally I want to thank my husband Emre Albayrak, I find it difficult to express my appreciation to him because it is so boundless. He took this journey with me and I felt his support in every single step of this journey. He stayed up all the night with me if I had to, he found something to read or write if I had too much to read or write. He lived all the up and downs with me during this process. He showed great generosity by giving priority to my career in our lives. Words never say how I am grateful to him.

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CHAPTER I

INTRODUCTION

This section aims to introduce the rationale for development of Inventory of Depression and Anxiety Symptom Scales-II (IDAS-II), its importance and development procedure. This chapter consists of 6 subdivisions. First, the concept of depression was summarized briefly. Second, prevalence rates and co-occurrence rates with anxiety disorders were presented. Third, existing measures of depression were discussed. Fourth development procedure and psychometric properties of initial version of IDAS were depicted. Sixth rationale for expanded version IDAS-II and its development procedure, psychometric properties were presented. Finally, the aim of the present study was mentioned.

1.1. Depression

Depression is a widespread mental disorder that is characterized by sadness, diminished interest or pleasure, feelings of guilt or worthlessness, sleep or appetite problems, feelings of tiredness and diminished concentration (Marcus, Taghi Yasamy, Ommeren, Chisholm, Saxena, 2012). Diagnostic and Statistical Manual of

Mental Disorders-IV-Revised (American Psychiatric Association, 2000) criteria for major depression is quite similar to WHO's definition but DSM-IV lists 9 criteria for major depression including depressed mood, markedly low interest or pleasure, significant weight loss, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue or loss of energy, feelings of worthlessness and inappropriate guilt, low concentration and recurrent thought of death. DSM-IV-R requires presence of at least five symptoms during the same two week and a change either in depressed mood or loss of interest/ pleasure or both of them.

1.1.1. Prevalence Rates of Depression

International Consortium of Psychiatric Epidemiology (ICPE) surveys revealed that life time prevalence rates of major depression varied from 3% in Japan to 16% in the US with the majority ranged between 8% and 12%. The 12-month/lifetime prevalence rates ranged from 40% to 55%. 30 day/12 month prevalence rate ranged between 45% and 65% and the median onset age ranged from 20 to 25 in most countries (Andrade et al., 2003). Other studies also revealed similar findings. The lifetime prevalence rate of major depression ranged between 5% and 20% (Hamet & Trembley, 2005; Kessler, 2003), whereas 5 to 25% percent experienced depression at least one time in their lives (Kessler, 2003). Prevalence rate of depression found to be 3% in Turkish adult sample based on ICD-10 criteria (Kılıç, 1998).

1.1.2. Depression as a Global Burden Disease

Depression is a significant part of global burden disease and affects 350 million people among countries across whole world (Marcus, Yasamy, Ommeren, Chisholm, & Saxena, 2012). The World Mental Health Survey carried out in 17 countries revealed that on average 1 of every 20 person reported having a depressive episode in the previous year. Depressive disorders generally occur at early ages and reoccurs throughout the life time and it contributes to worldwide disability in terms of lost years due to disability. Global burden of depression constitutes a huge challenge at social, economic and clinical level (WHO, 2012). Moussavi et al. (2007) demonstrated that depression was the fourth leading factor of worldwide disability. Depression causes greatest decrease in health in comparison with chronic disease such as angina, asthma and diabetes. Even the comorbid depression worsens health condition compared to any single chronic disease and combinations of chronic disease without depression. Therefore depression should receive high-priority in order to decrease disease burden and improve health quality of public (Moussavi et al., 2007). These results indicate the importance of depression as a global burden and reveal the importance of detecting depression in efficient way.

1.1.3. Anxiety and Prevalence Rates of Anxiety Disorders

According to WHO Health Surveys, Kessler and his colleagues (2009) mentioned that anxiety like depression is one of the most common psychiatric disorders even if it shows cultural differences in prevalence rates. According to DSM-IV-TR, anxiety disorders include generalized anxiety disorder (GAD), social anxiety disorder, specific phobia, panic disorder with and without agoraphobia,

obsessive-compulsive disorder (OCD), posttraumatic stress disorder (PTSD), anxiety due to medical condition, acute stress disorder and substance induce anxiety disorder. Kessler et al. (2005) demonstrated that the most common lifetime disorder was major depressive disorder (16.6%) whereas the most common class of disorders was anxiety disorders (28.8%). In the National Comorbidity Survey Replication (NCS-R) twelve month prevalence rate estimates revealed the prevalence rate was 2.7% for generalized anxiety disorder, 3.7% for Panic disorder/ agoraphobia, 3.6% for PTSD, 7.2% for Social phobia and 9.2% for Specific phobia (Gadernan, Alonso, Vilagut, Zaslavsky, & Kessler, 2012). Kılıç (1998) demonstrated that based on ICD-10 criteria the prevalence rates of phobias and panic disorder in Turkish sample were 7.7% and 0.8%, respectively.

1.1.4. Comorbidity of Depression and Anxiety Disorders

There are accumulating data on co-occurrence of depression and anxiety (Brady & Kendall, 1992; Brown, Campbell, Lehman, Grisham, & Mancill, 2001; Hiller, Zaudig, & von Bose, 1989; Lewinsohn, Zinbarg, Seeley, Lewinsohn, & Sack, 1997; Mineka, Watson, & Clark, 1998; Sanderson, Beck, & Beck, 1990). 57.5% of individuals with major depression episodes also meet the criteria for an additional anxiety disorder during the same 12-month period (Kessler et al., 2003; Kessler, Merikangas, & Wang, 2007). In addition each individual anxiety disorder revealed correlation with major depression with the range of .42 to .62 (Kessler, Chiu, Demler, Merikangas, & Walters, 2005). In the National Comorbidity Survey Replication (NCS-R) Gadernann, Alonso, Vilagut, Zaslavsky and Kessler (2012) demonstrated that at the individual level, four of the five most burdensome disorder were mental disorders specifically, panic/agoraphobia, bipolar disorder,

posttraumatic stress disorder and major depression. Comorbidity of depression and anxiety is associated with greater academic difficulties, higher rates of suicide risk, diminished overall quality of life and treatment outcomes (Kessler, Stang, Wittchen, Stein, & Walters, 1999; Lewinsohn, Rhode, & Seeley, 1995; Rush et al, 2005; Young, Mufson, & Davies, 2006).

Pignone and his colleagues (Pignone et al., 2002) demonstrated that successful screening accompanied with treatment of depressive disorders leads to improved quality of life functioning, employment and lower rates of mortality. It may also reduce expenditures on unnecessary health care. Therefore screening depression, anxiety and the comorbidity between them have both theoretical and practical implications (Starr, 2010).

1.2. Review of the Existing Measures of Depression

Demyttenaere and DeFruyt, (2003) proposed that in 1950s, new developments in the area of medicine led to the development of instruments that assess severity of depression and treatment outcomes. Today there are more than 100 scales for depression (Demyttenaere & De Fruyt, 2003). However specifically, Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996), the Hamilton Rating Scale for Depression, Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977), Inventory of Depressive Symptomatology, (Rush et al., 1986) turned out to be most prominent ones among those scales (Cusin, Yang, Yeung & Fava, 2010; Watson, 2007). Eventhough these scales have made meritorious contributions to clinical literature (Joiner, Walker, Pettit, Perez, & Cukrowicz, 2005), they are criticized in different ways (Watson, 2007).

Criticisms of existing measures mostly focused on reliability and validity these instruments. To begin with, BDI was turned out to be one of the most prominent inventories like CES-D or the Hamilton Rating Scale for Depression. Therefore BDI would receive priority in consideration. Original study of BDI-II revealed that retest reliability coefficient was .93 after one week with 26 psychiatric outpatients (Beck, Steer, & Brown, 1996). However Dozois and Covin (2004) indicated that this result reveals limited information on test-retest reliability of BDI-II. Dozois and Covin (2004) draw attention to the point that whether BDI-II is able to detect slight changes in depression due to treatment in short run because of the high rate of retest coefficient. Because high test-retest correlations makes a measure reliable on the one hand, paradoxically it may make the measure insensitive to small changes in level of depression on the other hand (Boyle, 1985). Also, 40% decrease was observed in non-clinical sample after two months interval therefore Ahava and his colleagues (Ahava et al., 1998) proposed that BDI-II may not be reliable for longer periods of time in healthy samples. These results arises concerns about reliability of BDI-II scores to detect changes in depression due to treatment outcomes.

Dozois and Covin (2004) also criticized BDI-II in terms of discriminant validity. As we mentioned before, high rates of co-occurrence was observed between depression and anxiety. This condition is problematic for self-report measures with regard to discriminant validity. Clark and Watson (1991) proposed that self-report measures of depression yielded high associations with corresponding indicators of anxiety with overall mean correlations ranging from .62 to .70 across various types of instruments. This result was supported in various samples including children,

adolescents, college students, adults and psychiatric patients (Brady & Kendall, 1992; Clark & Watson, 1991; Steer, Clark, Beck, & Ranieri, 1995; Watson, 2005; Watson et al., 1995). Besides self-report measures, remarkable amount of correspondence was observed between clinicians', parents' and teachers' ratings for depression and anxiety (Brady & Kendall, 1992; Clark & Watson, 1991; Mineka, Watson, & Clark, 1998). Criticisms of BDI-II with regard to discriminant validity are also valid for other depression instruments since these instruments are also highly correlated with anxiety instruments. Therefore many self-report measures are not able to well differentiate depression and other affective states appropriately (Dozois & Covin, 2004). In relation to discriminant validity problem, Gotlib and Cane (1989) addressed the content problems of these instruments and suggested that some self-report measures of depression including BDI and CES-D cover items that also tap to different types of anxiety.

In addition, the traditional measures of depression were criticized for their insufficiency of content. To be more precise, these measures do not cover all nine criteria for major depression in DSM-IV (Dozois, Dobson, & Ahnberg, 1998; Penley, Wiebe, & Nwosu, 2003). To give an example CES-D does not assess suicidal ideation, appetite gain or hypersomnia. This problem limits the applicability of CES-D to assess atypical, seasonal and melancholic subtypes of depression (Joiner et al., 2005). Also in some instruments, some symptoms are well-represented with multiple items whereas some symptoms are represented with single item. For instance, BDI-II contains several items for feelings of worthlessness and guilt (criterion 7), however it includes only one items for appetite disturbance, sleep disturbance and suicidal ideation. This may create problems in terms of structural analyses because covering

several items related to similar content led to identification of related content-based factor. Meanwhile content-based factors may not be identified in structural analyses when they are represented with only one item in the item-pool (Watson et al., 2007). Another issue about the traditional measures of depression is that they were developed to yield a single score for symptom severity. The use of overall scores is not problematic since these measures have impressive internal consistency. However, single index approach is criticized for hindering heterogeneous and multidimensional nature of depressive symptoms and identification of meaningful subtypes (Ingram & Siegle, 2002; Joiner et al., 2005).

As a summary, primarily based on researches on BDI, existing measures have problems regarding psychometric properties including, reliability, validity and content coverage. More specifically, BDI were criticized for whether it is sensitive to small changes in short run in patient sample. BDI also revealed drastic decrease in long run in normal sample leading to discussions about test - retest reliability of BDI. In addition, high level of correlations between self - report measures of depression and anxiety symptoms aroused concerns about discriminant validities of existing instruments. Moreover, most of the exiting measures of depression do not cover all nine criteria for major depression in DSM-IV. Even some symptoms were represented with single items thereby questioned sufficiency of content of these measures. Ordering of BDI-II responses from least depressed to most depressed, made it vulnerable to criticisms about social desirability and/or defensiveness when the fact that average scores are below 1 in non-clinic sample and rarely above 2 in patient sample. With the knowledge of high comorbidity rates between depression and anxiety and concerns about existing instruments; Watson et al. (2007)

emphasized the importance of assessing anxiety symptoms in comprehensive depression scale. Therefore, Inventory of Depression and Anxiety Symptoms were developed in order to compensate these limitations of existing measures.

1.3. Development and Psychometric Properties of Inventory of Depression and Anxiety Symptoms (IDAS)

Watson et al. (2007) created a large item pool to ensure that the related content was properly captured and all related symptom dimensions had a reasonable chance to emerge in analyses. Initial item pool of IDAS consisted of 180 items and was organized into 20 homogenous item composites (HICs). Thirteen of these HICs with 177 items were potentially associated to DSM-IV symptom criteria for basics of major depression including depressed mood, loss of interest or pleasure, appetite disturbance, sleep disturbance, psychomotor problems, fatigue/ anergia, worthlessness and guilt, cognitive problems and suicidal ideation and hopelessness subtype of depression (Abramson, Metalsky, & Alloy, 1989), specific symptom features of melancholic depression (Joiner et al., 2005) and angry/ irritable mood that can be alternative way of expressing depressed mood in childhood and adolescence (DSM-IV) and finally signs of heightened energy and positive affect that found to be related to depression (Mineka et al., 1998). The other seven HIC with 63 items were associated to anxiety related symptoms including anxious mood, worry, panic, agoraphobia, social anxiety, obsessive compulsive symptoms and traumatic intrusions.

Each symptom was rated by undergraduate students ($N= 499$) on 5-point scale based on their experiences “during the past two weeks, including today”. In

preliminary analyses, several factor analyses yielded a revised pool of 169 items. Next, separate Principle Factor Analyses were carried on these revised item pool in three large samples: undergraduate students ($N= 673$), psychiatric patients ($N= 369$), and community adults ($N= 370$) (Watson et al., 2007). Factor analyses revealed 10 content-specific factors in all three samples. Five of these factors were specifically associated with symptoms of major depression: Insomnia, Lassitude, Sociality, Appetite Loss and Appetite Gain. Three factors were associated with Panic, Social Anxiety and Traumatic Intrusions and assess specific types of anxiety symptoms. The last two factors assess feeling of high energy and positive affect (Well-being) and anger/hostility (Ill Temper). In addition to these content specific factors, one broad and non-specific factor that represents core emotional and cognitive symptoms of depression and anxiety emerged in analyses. Thus ten-item IDAS Dysphoria scale was generated to capture this broad content. Dysphoria scale consisted of single items representing depressed mood, anhedonia, worry, worthlessness, guilt, hopelessness and two items for apiece representing psychomotor disturbance and cognitive problems.

Dysphoria is a broad general scale that assesses emotional and cognitive components of depression. However Dysphoria is still limited compared to traditional measures of depression like BDI-II. Thereby, 20 item General Depression scale, consisting of all 10-item Dysphoria scales, 2 items for each of Suicidality, Lassitude, Insomnia, Appetite Loss and Well-being, was created.

Watson et al. (2007) reported psychometric data both in three scale development samples college ($N= 673$), patient ($N= 369$) and adult ($N= 370$); and

additional five different samples, Young Adults ($N= 271$), High School Students ($N= 247$), College students ($N= 307$), Patients ($N= 337$) and Postpartum Sample ($N= 830$). In terms of internal consistency, Alpha Coefficients of all scales typically exceeded .80 (Watson et al., 2007).

Several principle factor analysis that were carried out separately in each sample revealed one dominant factor that accounted for 85.9% to 92.4% of the variance across five samples. Dysphoria revealed loadings of .89 to .93 across samples and thereby supported the hypothesis that dysphoria could be higher order factor that exists at higher structural level.

The ability of final IDAS scales to reflect target dimensions was investigated in combined sample. Since Dysphoria is a broad and non-specific factor it was not included in the analysis. Thus principle factor analyses were carried out on 54 items. Analyses with promax rotation revealed 10 factors that reflect target scales. With the exception of one Hypersomnia item, 53 items were found to be clear markers of targeted scale with the primary loadings of .35 or higher. That Hypersomnia item ("I slept more than usual) was loaded on both Lassitude (.32) and Insomnia (-.35).

Among all of these samples, IDAS significantly differentiated psychiatric patients from other participants. General Depression and Dysphoria Scales revealed the greatest level of differentiation between psychiatric patients and other participants. General Depression and Dysphoria scales yielded the strongest correlations with Beck Depression Inventory- II, Edinburgh Postnatal Depression

Scale (EPDS; Cox, Holden, & Sogovsky, 1987) Reynolds Adolescent Depression Scale (RADS-II; Reynolds, 2002) and Hamilton Rating Scale for Depression (HRSD, Hamilton, 1960). Retest correlation coefficients was ranged from .72 (Ill-Temper) to .83 (Dysphoria and Panic) after one week in psychiatric patients ($N=250$). 10 specific scales revealed low to moderate correlations with one another with correlations generally fall between $|.20|$ and $|.50|$.

Eight of the IDAS scales (Social Anxiety, Panic, Suicidality, Lassitude, Insomnia, Appetite Loss, Irritability and Traumatic Intrusions) correlated with corresponding symptom scales of Interview for Mood and Anxiety Symptoms (Kotov, Gamez, & Watson, 2005). The mean convergent correlation was .50 indicating good convergent validity.

In further validation study of IDAS, Watson et al. (2008) examined the psychometric properties of IDAS in deeper. Convergent and discriminant correlations between self-report measures and interview based measures of 11 IDAS scales were investigated in college students ($N=303$) and psychiatric patients ($N=605$). Since there were no suitable interview based measures available (i. e., an instrument that assess all IDAS dimensions), Watson and his colleagues (Watson et al, 2008) created Clinician Rating Version of IDAS (IDAS-CR). Results revealed that all of the IDAS scales were significantly correlated to IDAS-CR counterparts. Convergent correlations in patient sample ranged from .52 (Well-being) to .71 (Appetite Loss) with mean value of .62 whereas convergent correlations in student sample ranged from .30 (Well-being) to .62 (Dysphoria) with mean value of .51. IDAS scales showed evidence of discriminant validity with the exception of Well-

being scale: 399 of 400 convergent and discriminant correlation comparisons were found to be significant ($p < .05$) in both samples.

Correlations with Structured Clinical Interview for DSM-IV established differential relations and revealed construct validity of the General Depression and Dysphoria Scales in relation to Depression; Panic scale in relation to panic disorder, Traumatic Intrusion Scale in relation to PTSD and Social Anxiety scale in relation to social phobia.

Incremental validity of IDAS scales in comparison with the BDI-II and BAI was examined with logistic regression analyses. Results showed that Dysphoria made the significant incremental contribution to major depression, Dysphoria and Insomnia made to GAD, Traumatic Intrusions and Social Anxiety made to PTSD, Lassitude made to panic disorder and Social Anxiety made to social phobia. Also, the association between (low) Well-being and depression was close to significance. These results are important since Traumatic Intrusions and Social Anxiety have incremental validity and reflect important variance that is not contained in the BDI-II and BAI.

As a result, the first version of IDAS consisted of 64 items and 11 scales: Dysphoria, Well-being, Panic, Suicidality, Insomnia, Lassitude, Social Anxiety, Ill Temper, Traumatic Intrusions, Appetite Loss and Appetite Gain. Also one broader scale General Depression was created but it shares all items with other scales. IDAS showed evidence of excellent internal consistency in college students, psychiatric patients, postpartum women, young adults, community adults and high school

students (Watson et al, 2007). IDAS scales established good convergent, discriminant and incremental validity with BDI-II, BAI as well as with interview based measures of depression and anxiety (Watson et al., 2008).

1.4. Rationale for Expanded Version of IDAS: IDAS-II

The encouraging psychometrics results of IDAS led the expansion of IDAS subscales that aim to assess mood and anxiety symptoms in more comprehensive way. In order to achieve this goal, new subscales were developed to assess other important aspects of anxiety disorders including OCD, agoraphobia along with bipolar disorder.

There are various self-report measures that assess contents such as depressed mood, social anxiety or OCD, however jointly factor analyzing this diverse content enables to select items that have good discriminant validity for the final scale. So that maximum differentiation among scales can be achieved and each symptom cluster would be assessed as clear and distinct as possible.

Also assessing depression and anxiety symptoms with a comprehensive single instrument is advantageous than assessing the same content with different scales. Because single comprehensive inventory permits to eliminate confounding factors related to common variances (Johnson, Rosen, & Djurdjevic, 2011). Therefore, single comprehensive instrument like IDAS-II can assess this diverse content in exactly same way and can reveal stronger relations compared to those that base on different scales and methods (Johnson, Rosen, & Djurdjevic, 2011; Reio, 2010)

IDAS-II differs from most prominent psychopathology inventories such as MMPI-2-RF (Ben-Porath & Tellegen, 2008), the Personality Assessment Inventory (PAI; Morey, 2007), and the Million Clinical Multiaxial Inventory–III (MCMI-III; Millon, 2009) for some reasons. Firstly, IDAS-II is restricted to mood and anxiety disorders specifically, whereas MMPI-2-RF, PAI and MCMI-III cover broad range of psychopathology including indicators of externalization and thought dysfunction. Also, IDAS-II aims to assess current symptomology rather than manifestations of personality pathology (Watson et al. 2012). Moreover, IDAS aimed to provide the most detailed and differentiated data on mood and anxiety disorders. Therefore, IDAS-II contains 3 OCD symptom scales, 2 PTSD scales and separate measure of social anxiety/social phobia and claustrophobia whereas for instance PAI contains only one scale for OCD, PTSD and phobias.

IDAS-II bipolar scales seemed to share similar content with existing measures such as General Behavior Inventory (GBI; Depue et al., 1981; Depue, Krauss, Spont, & Arbisi, 1989), The Hypomanic Personality Scale (HPS; Eckblad & Chapman, 1986) and The Hypomania Checklist–32 (HCL-32; Angst et al., 2005), however they differ in how they assess this content. GBI and HPS aim to assess long-term tendencies in manic/ hypomanic states and HCL-32 gives information about how the respondents felt during an elevated mood state. On the contrary, IDAS-II bipolar scales aims to assess current (past two weeks) symptoms of bipolar disorder. Therefore, IDAS-II bipolar scale provides information different from existing measures (Watson et al. 2012).

Overall, IDAS-II aimed to provide the most detailed and differentiated data on mood and anxiety disorders.

1.5. Development and Validation of New Anxiety and Bipolar Symptom Scales for Expanded Version of the IDAS (The IDAS-II)

Candidate items for new IDAS scales were organized into Homogenous Item Composites (HIC; Hogan, 1983) in order to be sure that adequate amount of markers were included in new item pool. Firstly, 12 symptom clusters that represent PTSD (two HICs), OCD (three HICs), social phobia (two HICs), specific phobia (three HICs), agoraphobia (one HIC), and mania (one HIC) were developed.

IDAS already had the measure for intrusions; in addition Insomnia, Ill-Temper and Dysphoria scales already had items that reflect DSM-IV Criterion D1, D2, and D3 for PTSD, respectively. Also IDAS Panic scale contained remaining arousal symptoms of Criterion D, hypervigilance and exaggerated startle response. Thereby, in order to cover all PTSD symptoms, avoidance and numbing HICs were included into IDAS-II item pool.

Revision of 12 major factor-analytic studies on OCD revealed four symptom dimensions: symmetry and ordering, cleaning and contamination, obsessions and checking, and hoarding (Mataix-Cols, Rosario-Campos, & Leckman, 2005). Item-level analyses of the Obsessive Compulsive Inventory (OCI; Foa, Kozak, Salkovskis, Coles, & Amir, 1998), the OCI-Revised (OCI-R; Foa et al., 2002), and the Schedule of Compulsions, Obsessions, and Pathological Impulses (SCOPI; Watson & Wu, 2005; see Foa et al., 2002; Wu & Watson, 2003) supported 4

factor structure. However, hoarding is not a specific symptom of OCD, it is found to be related to broad range of psychopathology (Mataix-Cols et al., 2010; Wu & Watson, 2005). Thereby, IDAS-II item pool included three HCIs tapping to cleaning, ordering/rituals and checking/counting.

Researches on social phobia sported two-factor model: The social interaction factor reflects fear related to interacting with others while performance/scrutiny factor reflects fear of being watched by others as well as engaging in activities (Habke, Hewitt, Norton, & Asmundson, 1997; Hughes et al., 2006; LeBeau et al., 2010; Safren, Turk, & Heimberg, 1998). IDAS had contained single measure of social anxiety therefore two separate HICs were included in IDAS-II item pool.

DSM-IV organizes specific phobia in four categories including animal, natural environment, blood-injection-injury and situational. However several phobia measures such as the Fear Survey Schedule–III (FSS-III; Wolpe & Lang, 1974) and the Phobic Stimuli Response Scales (PSRS; Cutshall & Watson, 2004) supported three factor solution including animal fears, blood-injection fears and combination of situational/agoraphobic fears (Arrindell, Pickersgill, Merckelbach, Ardon, & Cornet, 1991; Beck, Carmin, & Henninger, 1998; Cutshall & Watson, 2004; Muris, Schmidt, & Merckelbach, 1999). Thereby separate HICs were included in IDAS-II item pool to represent these three factors. Since IDAS agoraphobia scale was failed to define replicable factor, its items were revised and then included in IDAS-II item pool.

The Bipolar HIC aimed to assess symptoms of manic and hypomanic episodes including grandiosity and an inflated sense of self-esteem, decreased need for sleep, talkativeness/pressure of speech, flight of ideas, restlessness/ agitation, negative sequelae of excessive goal-directed activity, affective lability, and elevated/ euphoric that are associated with manic and hypomanic episodes.

IDAS new item pool was enriched to assess traumatic intrusion, numbing, cleaning, checking/counting, ordering/ rituals, social interaction anxiety, performance/evaluation anxiety, animal phobia, blood-injection phobia, situational phobia, agoraphobia and bipolar symptoms.

Scale development analyses were carried out in college student sample ($N=307$) and community dwelling adult sample ($N=355$). Separate series of principle factor analyses with squared multiple correlations were carried out in each sample. All factors were rotated with varimax and promax.

Numbing items were found to be strongly correlated with the existing Dysphoria scale in both student ($r=.84$) and community ($r=.83$) samples. Thereby Numbing was dropped from further analyses. Social interaction and performance anxiety was strongly correlated with both each other and already existing Social Anxiety Scale. Therefore one item from performance anxiety dimension was added into already existing Social Anxiety factor. So that psychometric properties of target factor was enhanced without raising its correlations with other IDAS-II scales.

Principle factor analyses of anxiety scales revealed 8 eight clear and replicable dimension. Cleaning, Ordering, Checking, Traumatic Avoidance and Animal Phobia reflected specific anxiety symptoms. One of the factors included items from both agoraphobia and situational phobia. Since both DSM-IV (American Psychiatric Association, 1994) and DSM-V work group (LeBeau et al., 2010, Wittchen, Gloster, Bessdo-Baum, Fava & Craske, 2010) acknowledged the close relation between agoraphobia and situational subtype of specific phobia, this factor was named as Claustrophobia and remained for further analyses. However blood injection items failed to identify replicable factor, for this reason it was dropped from further analyses. Even though, Animal Phobia showed good internal consistency it failed to reveal good convergent and discriminant validity therefore it was not considered in further analyses.

The bipolar items revealed 2 replicable factors: (1) Mania that represents talkativeness/pressure of speech, flight of ideas, affective lability, and the negative sequelae of excessive goal-directed activity; (2) Euphoria that represents elevated mood, heightened energy, and grandiosity/excessive self-esteem. However affective lability and the negative sequelae of excessive goal-directed activity showed poor discriminant validity in relation to Dysphoria and thus they were dropped from further consideration. Also two of the Euphoria scales showed poor discriminant validity in relation to Well-being scale and dropped from further analyses. As a result, the expanded version of IDAS consisted of 99 items that forms 18 non-overlapping scales plus General Depression scale (that contains item from several other scales).

Cronbach Alpha coefficients for IDAS-II were found to be between .79 and .90 with median value of .84 for adult sample ($N= 1091$). Alpha values were ranged between .81 and .90 for patients ($N= 908$). Alpha values ranged between .78 and .88 with median value of .85 for students ($N= 2504$). However, alpha values for Euphoria was found to be slightly lower but still acceptable; .72, .76 and .79 for adult, student and patient samples, respectively. Average Interitem Correlations (AIC) for Cleaning, Social Anxiety, Ordering, Mania and Euphoria were ranged from .34 to .56 across samples. AICs for Claustrophobia were moderate in student sample (.53) but slightly higher in adult (.59) and patient (.62) sample.

Principle component analyses (with rotation to oblique simple structure using promax) over combined sample ($N= 4503$) revealed three interpretable factors. The first factor resembled general factor of original IDAS had loadings of .90 was labeled as Distress. The second factor that was marked by three OCD scales with the loadings ranging from .64 to .72 was labeled as Obsessions/Fear. Claustrophobia and Social Anxiety was also contributed to this dimension with the loadings of .60 and .41 respectively. The third factor was marked by Euphoria and Well-being and labeled as “Positive Mood” with the loadings of .70 and .69 respectively. Mania had also contributed to Positive Mood with the loading of .33. Factor Loadings of the IDAS-II Scales were presented in Table 1.1.

Overall mean r value for self-report measures, IDAS-II and SCOPI was .72 across all symptoms of OCD and samples. IDAS-II (mean convergent $r= .59$) and SCOPI (mean convergent $r= .59$) revealed close convergent correlations with clinical ratings. Mean r values found to substantial for Cleaning ($r= .67$), Ordering ($r= .66$),

and Checking ($r = .59$) in both patient and student sample. Factor structure and loadings of original IDAS-II were presented in Table 1. 1.

Table 1. 1. Promax Loadings of the IDAS-II Scales (Standardized Combined Sample)

IDAS-II Scales	Factor		
	I	II	III
Dysphoria	0.90	-0.01	-0.13
Lassitude	0.76	-0.09	-0.01
Ill Temper	0.68	0.04	0.01
Panic	0.68	0.16	0.05
Traumatic Intrusions	0.66	0.11	-0.03
Insomnia	0.61	0.01	0.06
Appetite Loss	0.56	-0.04	0.04
Mania	0.55	0.15	0.33
Suicidality	0.52	0.15	-0.13
Traumatic Avoidance	0.47	0.25	0.00
Appetite Gain	0.32	0.16	0.08
Cleaning	-0.04	0.72	-0.01
Ordering	0.03	0.69	0.10
Checking	0.08	0.64	0.08
Claustrophobia	0.11	0.60	-0.10
Social Anxiety	0.40	0.41	-0.13
Euphoria	0.16	0.10	0.70
Well-Being	-0.26	-0.04	0.69

Note. From Development and Validation of New Anxiety and Bipolar Symptom Scales for an Expanded Version IDAS (IDAS-II) by Watson et al. (2012), *Assessment*, 19(4), 399-420. $N = 4503$. Loadings $\geq |.30|$ are in boldface.

As a classical test of discriminant validity, each convergent correlation is expected to be higher than any of the other values in its row and column of the heteromethod block (Campbell & Fiske, 1959). All of the convergent correlations for OCD measures were found to be higher than discriminant coefficients in the same column or row of heteromethod block. These results indicated strong evidence for discriminant validity even for strongly correlated measures of checking and ordering. Convergent and discriminant validity data on PTSD scales were reported separately for patients ($N = 448$) and students ($N = 591$). The convergence between IDAS-II

PTSD scales and PTSD Checklist- Civilian Version was impressive with the overall mean r of .73. IDAS-II showed to slightly higher correlations with clinician rating counterpart IDAS-CR compared to PCL. Convergent correlations were substantial for both measures of intrusions and avoidance and both in patient and student data. All comparisons between convergent correlations and other values in the same row or columns revealed significant results indicating evidence of discriminant validity ($p < .05$).

Social Anxiety Scale of IDAS-II were found to be strongly associated with the social phobia scales of the APPQ ($r = .68$), PSRS ($r = .59$), and FQ ($r = .53$), thereby indicating its convergent validity. In addition all three social phobia scales correlated significantly more strongly with Social Anxiety than with any other scale of IDAS-II and established its discriminant validity. IDAS-II Claustrophobia scale was strongly correlated with PSRS Physical Confinement scale ($r = .51$). Also Physical Confinement was correlated significantly more strongly with Claustrophobia than with any other IDAS-II scale. However, Claustrophobia showed weaker correlations with measures of agoraphobia ($r = .30$ for FQ Agoraphobia; $r = .37$ for APPQ Agoraphobia).

IDAS-II Mania scale showed strong associations with GBI Hypomania ($r = .56$), HPS Mood Volatility ($r = .54$), and GBI Biphasic ($r = .51$). Euphoria scale showed strong associations with HPS Excitement scale ($r = .45$) than with the other HPS subscale. Euphoria also showed moderate relations with the HPS Total score ($r = .45$) and with GBI Hypomania ($r = .44$), which further established its convergent validity. Significance tests revealed that the HPS Total score and HCL-32 were more

strongly associated with Euphoria and Mania than with any other IDAS-II scale. In addition, GBI Hypomania and HPS Mood Volatility were more strongly associated with Mania than with any other IDAS-II scale. Also HPS Excitement and HPS Social Vitality related more strongly with Euphoria Compared to any other IDAS-II scale. These results established convergent/discriminant pattern of IDAS-II bipolar scales. In contrast, GBI Biphasic scale associated significantly more strongly with Dysphoria ($r = .62$) than with any other IDAS-II scale.

Criterion validity of IDAS was investigated in relation to DSM-IV disorders via IMAS ($N = 394$). IDAS Social Anxiety Scale showed the strongest correlation with IMAS Social Phobia ($r = .70$) and all three OCD scales of IDAS were related to IMAS OCD (r s range from $.66$ to $.68$). Claustrophobia had the strongest association with both IMAS Agoraphobia ($r = .71$) and Specific Phobia ($r = .49$). In addition, Euphoria and Mania strongly and specifically related to IMAS Mania with the r values of $.64$ and $.63$, respectively whereas Ill Temper was strongly correlated with IMAS Irritability ($r = .72$). Finally, Dysphoria strongly related to both Depression ($r = .74$) and GAD ($r = .72$). IDAS-II Panic scale had the strongest correlation with IMAS Panic ($r = .65$), however it was also highly correlated with GAD ($r = .63$). Both Traumatic Intrusion ($r = .61$) and Traumatic Avoidance ($r = .59$) strongly correlated with IMAS PTSD but also Dysphoria ($r = .63$) was found to be substantially correlated with IMAS PTSD.

Specifically, Traumatic Intrusions and Traumatic Avoidance both significantly predicted PTSD. Social Anxiety and Panic were the strongest contributors of Social Phobia and Panic, respectively. Claustrophobia was found to

be the strongest contributors of both Agoraphobia and Specific Phobia whereas Checking, Ordering, and Cleaning were the only significant contributors of OCD. Both Euphoria and Mania made the strongest associations with IMAS Mania. Ill Temper was found to be the only significant contributor of Irritability. Results showed that Dysphoria made the strongest association with both Depression and GAD. Finally, Cleaning also was found to be secondarily related to Specific Phobia. Correlations between DSM-IV diagnosis and IDAS-II were also examined via SCID-IV (First, Spitzer, Gibbon, & Williams, 1997) in Patient Sample ($N = 394$). Polychoric correlations between IDAS-II scales and nine DSM-IV mood and anxiety disorders diagnosis were assessed to reduce the effect of differential base rates of various disorders. Results showed that both Traumatic Intrusions (polychoric $r = .51$) and Traumatic Avoidance ($r = .48$) both were substantially associated to PTSD whereas Social Anxiety established the strongest relation ($r = .48$) with social phobia. Claustrophobia was strongly associated with both agoraphobia ($r = .54$) and specific phobia ($r = .48$). Ordering ($r = .55$) and Checking ($r = .45$) were specifically associated with OCD diagnosis. Cleaning was related to both OCD ($r = .51$) and specific phobia ($r = .50$). Euphoria ($r = .47$) and Mania ($r = .33$) both were significantly had the strongest correlations with current manic episodes. Dysphoria established the strongest association with major depression ($r = .67$) and GAD ($r = .35$). In Contrast, the IDAS-II Panic scale ($r = .43$) did not establish specific link to panic disorder.

Logistic regression analyses showed that Traumatic Intrusions were significantly related to the prediction of PTSD. Panic scale made the strongest association with panic disorder. Social Anxiety was found to be the only significant

predictor of social phobia. Claustrophobia had the unique, incremental contribution to agoraphobia. Ordering significant contributed to OCD. Cleaning was significantly associated with both OCD and specific phobia. Dysphoria significantly associated with depression and GAD. Three results approached significance level: Traumatic Avoidance in relation to PTSD, Claustrophobia in relation to specific phobia and Euphoria in relation to mania. However, Checking failed to contribute OCD and Mania failed to predict manic episodes.

As a summary, IDAS-II included three main factors (Distress, Obsessions/Fear and Positive Mood) and eighteen sub-scales. With the inclusion of new scales, IDAS became able to assess important aspects of mood and anxiety disorders that were not covered by first version of IDAS. Final scales were found to be internally consistent and they reflect distinct types of symptoms. Moreover, in relation to other self-report measures of depression, anxiety and mania, IDAS-II scales established good convergent, discriminant, and criterion validity. Original IDAS-II subscales with number of items in each scale and sample items were presented in Table 1.2.

1.6. Purpose of the Present Study

Watson and his colleagues (Watson et al., 2012) demonstrated that expanded version of Inventory of Depression and Anxiety Symptoms (IDAS-II) is a reliable and valid tool to screen depression and anxiety and to assess severity of symptoms in both patient and normal samples. The purpose of the present study is to bring into use an inventory that assesses depression and anxiety symptoms jointly as well as bipolar symptoms in Turkish culture. We believe that assessing highly correlated depression

Table 1. 2. IDAS-II Subscales with Number of Items with Sample Items in Each Scale

IDAS- II	Scale	# of items	Sample items
Factor 1: Distress	Dysphoria	10	I had little interest in my usual hobbies and activities.
	Lassitude	6	I felt exhausted.
	Ill Temper	4	I had disturbing thoughts of something bad that happened to me.
	Panic	8	I felt a pain in my chest
	Traumatic Intrusions	4	I had disturbing thoughts of something bad that happened to me.
	Insomnia	6	I slept less than usual
	Appetite Loss	3	I did not feel much like eating
	Mania	5	I kept racing from one activity to the next
	Suicidality	6	I cut or burned myself on purpose
	Traumatic Avoidance	4	I avoided situations that bring up bad memories
Appetite Gain	3	I ate when I wasn't hungry	
Factor 2: Obsessions/ Fear	Cleaning	7	I washed my hands excessively
	Ordering	5	I rearranged things so that they were in a certain order
	Checking	3	I felt the urge to check to make sure I had done something
	Claustrophobia	5	I was afraid of getting trapped in a crowd
Social Anxiety	6	I was worried about embarrassing myself socially	
Factor 3: Positive Mood	Euphoria	5	I felt like I was “on top of the world”
	Well-Being	8	I looked forward to things with enjoyment

Note. From Development and Validation of New Anxiety and Bipolar Symptom Scales for an Expanded Version IDAS (IDAS-II) by Watson et al. (2012), *Assessment*, 19(4), 399-420.

and anxiety symptoms jointly enables to screen two important aspects of psychopathology, identify and manage risks for patients, develop appropriate treatment plans and monitor progress and outcomes. Therefore, the first aim of the current study is to evaluate the psychometric properties of the Turkish version of the expanded version of Inventory of Depression and Anxiety Symptoms-II (IDAS-II). Reliability and validity of IDAS-II was tested on both healthy control sample and combined sample consisting of healthy controls and patients. For this purpose, internal consistency, test-retest reliability and also construct, discriminant, convergent and concurrent validity were assessed. As a part of validity, the factor structure of

IDAS-II was examined. Finally group comparisons were carried out according to demographic information of the study sample, e.g. gender, perceived level of income, level of education, marital status and work status.

CHAPTER II

METHOD

2.1. Participants

The participants consisted of 208 psychiatric outpatients (147 female, 61 male; $M_{age}= 38.99$, $SD= 12.88$) and 713 healthy controls (480 female, 230 male; $M_{age}= 30.70$, $SD= 11.55$). Three participants in normal sample did not report gender therefore they are coded as missing. Patient sample was recruited from out-patient services of Bakırköy Ruh ve Sinir Hastalıkları Hastanesi and Surp Pırgıç Ermeni Hastanesi, Levent Aile Sağlığı Merkezi, Bursa Özel Rentıp Hastanesi and Çorlu Askeri Hastanesi. Participants were diagnosed with mood disorders and/or anxiety disorders based on DSM-IV-TR criteria. Patients whose diagnoses were agreed on by two psychiatrists were included in the study. Healthy control group was composed of college students and adults. College students were recruited from undergraduate and graduate students from Bahçeşehir University. Adults were reached through using snowball sampling. In addition, a group of participants ($N= 100$) from healthy control group was included to test-retest reliability procedure after 4 or 5 weeks of the first assessment.

2.2. Instruments

2.2.1. Beck Depression Inventory (BDI)

Beck Depression Inventory-I was used to examine convergent and discriminant validity of IDAS scales that are related to depressive symptoms. BDI-I is a 21-item self-report measure that aims to assess cognitive and emotional symptoms of depression in last week. Participants rate each item on 4-point scale ranging from 0 (absent) to 3 (severe) and total scores range from 0 to 63 (Beck, 1961). Cronbach Alpha coefficient was found to be .80 and split-half reliability was found to be .74 for Turkish form of BDI (Hisli, 1989).

2.2.2. Beck Anxiety Inventory (BAI)

Beck Anxiety Inventory was used to examine convergent and discriminant validity of IDAS scales that are related to anxiety symptoms. BAI is 21-items self-report measure that assesses level of anxiety and evaluates physical, emotional and cognitive aspects of anxiety as well as fear of losing control (Beck, Epstein, Brown & Steer, 1988). Participants rate each item on 4-point scale ranging from 0 (absent) to 3 (severe) and total scores range from 0 to 63 and high scores indicate more severe anxiety symptoms. Cronbach Alpha coefficient of internal consistency found to be .92. Test-retest reliability coefficient found to be .75 for one week interval. Correlations with Trait Anxiety Inventory and State Anxiety Inventory found to be .48 and .50 respectively. BAI demonstrated strong discriminant validity in discriminating patients with anxiety from patients with depression and found to be better at discriminating patients with anxiety compared to State-Trait Anxiety Inventory. Turkish adaptation study of BAI was carried out by Ulusoy, Şahin and

Erkmen (1996). Cronbach Alpha coefficient was .93 for patient sample and item total correlation coefficients found to be between .45 and .72. Test-retest reliability coefficient was .57 and Turkish version of BAI found to be successful at discriminating anxiety group from depression group.

2.2.3. Panic and Agoraphobia Scale (PAS)

Panic and Agoraphobia Scale was used to examine convergent and discriminant validity of IDAS scales. The PAS is related to anxiety symptoms more specifically panic, claustrophobia and social anxiety. PAS was aimed to identify and evaluate important aspect panic disorder with and without agoraphobia (Bandelow, 1999). PAS has 14 items that assess panic attacks, agoraphobia, anticipatory anxiety, disability and worries about health separately. Scale has two distinct forms, one of them is self-report and the other form is rated by an observer. Turkish adaptation study was completed by Tural, Fidaner, Alkin and Bandelow (2002). Cronbach Alpha Coefficients were .88 and .86 for self-report and clinician rated form, respectively. Test-retest reliability was .82 and .70 for clinician-rated and self-report forms, respectively. Self-report form of Panic Agoraphobia Scale was used in current study.

2.2.4. Mood Disorder Questionnaire (MDQ)

The MDQ was used to examine convergent and discriminant validity of IDAS scales that are related to bipolar symptoms namely depression, mania and euphoria. MDQ is a self-report measure of bipolar I and bipolar II disorders. MDQ was developed on the bases of DSM-IV criteria and clinical experience (Hirschfeld et al., 2003). MDQ has thirteen yes-no items to assess lifetime history of manic and

hypomanic symptoms. Another question also asks whether manic or hypomanic symptoms or behaviors were experienced at the same time or not. And the last question asks respondents to rate the level of impairment in functionality due to symptoms on 4-point scale. Sensitivity of MSQ for out-patients with mood disorder, general population, bipolar disorder patients and primary care patients receiving treatment for depression were .73, .28, .58, .58, respectively and specificities were .90, .97, .67 and .93, respectively. Turkish adaptation of MDQ demonstrated that contributions of MDQ to SCID-1 diagnosis ranged between 15% and 61.8% (Konuk et al., 2007). Analysis of cut-off points of 5, 6 and 7 demonstrated that as the cut-off score increases specificity increases while sensitivity of Turkish form decreases.

2.2.5. Maudsley Obsessive Compulsive Inventory (MOCI)

Maudsley Obsessive Compulsive Inventory (MOCI) was used to examine convergent and discriminant validity of IDAS scales that are related to OCD symptoms. MOCI was developed by Hodgson and Rachman (1977) and turned out to be most commonly used self-report measure to assess the type and level of obsessive compulsive symptom (Sanchez-Meca, et al., 2011). MOCI consists of 30 items that are organized into 4 factors namely checking, cleaning, slowness and doubling. Participants are required to give yes/no response to each item. Test scores range from 0 to 37 where high scores indicate more severe obsessive compulsive symptoms. Internal reliability of test scores turned out to be .76 original 30-items version. Turkish version of inventory includes one additional scale namely rumination, that consists of 7 items (Erol and Savaşır, 1988). Alpha coefficient of internal consistency turned out to be .81 for 30-items and .86 for 37-items. Alpha coefficients ranged from .31 to .71 for subscales.

2.2.6. PTSD Check List-Civilian Version (PCL-C)

PTSD Check List was used to examine convergent and discriminant validity of IDAS scales that are related to PTSD, namely Traumatic Intrusions and Traumatic Avoidance. PCL-C consists of 17 items that were designed to assess DSM-IV criteria for PTSD. Participants rate each symptom on a 5 point likert scale that ranges from 'not at all' to 'extremely'. PCL-C consists of three subscales: re-experiencing, avoidance and hyper-arousal. Cronbach alpha coefficients found to be .94, .85, .85 and .87 for PCL total score, re-experiencing, avoidance and hyper-arousal subscales respectively. In terms of convergent validity, PCL was found to be highly correlated with Impact of Event Scale (IES) and Mississippi Scale for PTSD- Civilian Version (MS-C) ($r > .75$). Correlations between PCL and both MS-C and IES were found to be higher than correlations between PCL and Symptom Check List-90-Revised, $p < .001$. Participants were reassessed in an hour, one week after and two weeks after initial assessment. Test-retest coefficients found to be .92, .88 and .68 for immediate, one week interval and two weeks interval re-testers, respectively (Ruggiero, Scotti, Rabalais, 2003).

Turkish adaptation study of PCL-C was carried out by Kocabaşoğlu, Özdemir, Yargıç and Geyran (2005). Turkish version of PCL-C showed strong internal consistency with Cronbach's alpha coefficient of .92. Turkish version of PCL-C total score ($r = .65$), and intrusion ($r = .618$), hyperarousal ($r = .563$) and avoidance ($r = .458$) subscale scores found to be correlated with corresponding subscales of Clinician Administered Post Traumatic Stress Disorder Scale (CAPS).

2.3. Translation of IDAS- II

In the first step, the IDAS-II items were translated from English into Turkish with many possible alternatives for each item by researchers. This form was sent for evaluation to four instructors and professors from the departments of English Language and Literature or American Culture and Literature of various universities. They were asked to choose the most appropriate item-translation from the suggested alternatives and to suggest a new translation if more appropriate. If all the instructors agreed on same sentence for an item, the alternative ones were eliminated. Still, those items were represented in the second draft. Based on the suggestions, second draft was prepared to send four judges who are bilingual and specialized in the area of clinical psychology or psychiatry. Judges were asked to choose one of the existing options or generate an alternative sentence if necessary. Based on the judges' suggestions the final draft was formed.

In the next step, the final draft was sent to two translators who are specialized in clinical psychology with doctorate degree for back translation. The items of the back translated form was found to be close to original items of the inventory. After that final form of the scale was completed.

2.4. Procedure

The study was approved by the Research Ethics Board of the Bahcesehir University. All participants were volunteered and informed consents were received. In addition, demographic information questionnaire was administered to assess age, sex, education, social-economic level and medical history of the participants. Each administration approximately took 30-50 minutes. In order to control order effect of

the questionnaire, counter balance technique was used. The demographic information questionnaire was administered at first, and the other questionnaires were applied using counterbalancing technique.

CHAPTER III

RESULTS

In this section, following demographic analyses, reliability and validity analyses of IDAS-II were presented. 921 participants (713 normal, 208 patients) were included in the analyses. Analyses were carried out with normal ($N= 713$) and combined sample ($N= 921$), separately. Therefore results for normal and combined samples were reported separately for the ease of presentation.

3.1. Demographic Analyses for Normal, Patient and Combined Sample

In normal sample, three participant did not report their gender and these data were coded as missing, therefore normal sample consisted of 480 female and 230 male participants (age range= 18-80, $M = 30.70$, $SD= 11.55$). Detailed demographic information related to gender, marital status, level of education, work status and perceived level of income were presented in Table 3.1 for normal sample.

In patient sample, thirteen participants did not report age and therefore these data coded as missing. Thus patient sample consisted of 147 female 61 male participants (age range= 18-73, $M = 38.99$, $SD= 12.88$). Demographic information

related to gender, marital status, level of education, work status and perceived level of income can were presented in Table 3.2 for patient sample.

Table 3. 1. Demographic Information of Normal Sample

		f	%	Cum %
Gender	Female	480	67.3	67.6
	Male	230	32.3	100.0
	Missing	3	0.4	
	Total	713	100.0	
Marital Status	Married	258	36.2	36.7
	Single	424	59.5	97.0
	Cohabitee	9	1.3	98.3
	Other	12	1.7	100.0
	Missing	10	1.4	
	Total	713	100.0	
Education	Primary school	31	4.3	30.4
	Secondary school	23	3.2	39.7
	High School	238	33.4	71.6
	University	341	47.8	97.1
	Graduate Degree	61	8.6	100.0
	Missing	19	2.7	
	Total	713	100.0	
	Work Status	Working	345	48.4
Not working		305	42.8	94.1
Retired		41	5.8	100.0
Missing		22	3.1	
Total		713	100.0	
Perceived level of income	Low	62	8.7	9.3
	Below middle	64	9.0	18.8
	Middle	324	45.4	67.3
	Above middle	156	21.9	90.6
	High	56	7.9	99.0
	Very high	7	1.0	100.0
	Missing	44	6.2	
	Total	713	100.0	

Table 3. 2. Demographic Information of Patient Sample

		f	%	Cum %
Gender	Female	147	70.7	70.7
	Male	61	29.3	100.0
	Missing	0	0.0	
	Total	208	100.0	
Marital Status	Married	120	57.7	58.3
	Single	77	37.0	95.6
	Cohabitee	2	1.0	96.6
	Other	7	3.4	100.0
	Missing	2	1.0	
	Total	208	100.0	
	Education	Primary school	62	29.8
Secondary school		19	9.1	39.7
High School		65	31.3	71.6
University		52	25.0	97.1
Graduate Degree		6	2.9	100.0
Missing		4	1.9	
Total		208	100.0	
Work Status	Working	80	38.5	39.2
	Not working	99	47.6	87.7
	Retired	25	12.0	100.0
	Missing	4	1.9	
	Total	208	100.0	
Perceived level of income	Low	71	34.1	35.9
	Below middle	12	5.8	41.9
	Middle	87	41.8	85.9
	Above middle	23	11.1	97.5
	High	3	1.4	99.0
	Very high	2	1.0	100.0
	Missing	10	4.8	
	Total	208	100.0	

Prior to analysis, data screened for all variables. To treat missing data in study variables, mean substitution method was used. However, if an individual left empty more than 5 items on IDAS, they were excluded from data ($N= 39$). Also individuals in normal sample who reported psychiatric diagnosis history, they were excluded

from normal sample ($N= 17$). Then, normality, linearity and homoscedasticity assumptions were examined. To improve linearity and to reduce the extreme skewness and kurtosis, 8 items were logarithmically transformed.

3.2. Differences of Demographic Variables on IDAS-II Scales

Effects of gender, marital status, work condition, education and perceived level of income on IDAS-II scales were examined. One-way analysis of variance (ANOVA) revealed that gender had a significant effect on Dysphoria symptoms [$F(1, 708)= 4.24, p < .05$]. Females ($M= 19.02, SD= 8.08$) had higher scores on Dysphoria compared to males ($M= 17.74, SD= 6.68$); One-way ANOVA showed that gender had an effect on Lassitude symptoms [$F(1, 708)= 11.74, p < .001$]. Females ($M= 13.85, SD= 5.32$) had higher scores on Lassitude scale than males ($M= 12.45, SD= 4.53$). One-way ANOVA also revealed that gender had an effect on Apatite Gain scale [$F(1, 708)= 5.19, p < .05$]. Females ($M= 6.08, SD= 2.85$) had higher scores on Apatite Gain compared to males ($M= 5.58, SD= 4.48$). In addition, gender had a significant effect on Claustrophobia symptoms [$F(1, 708)= 7.30, p < .01$]. Females ($M= 6.95, SD= 4.01$) revealed higher scores on Claustrophobia than males ($M= 6.13, SD= 3.30$). One-way ANOVA also showed that gender had significant effect on symptoms of Traumatic Intrusions [$F(1, 708)= 10.30, p < .001$] and Traumatic Avoidance [$F(1, 708)= 7.29, p < .01$]. Females ($M= 7.97, SD= 3.99$) had higher scores on Traumatic Intrusions compared to males ($M= 6.99, SD= 3.44$). Females ($M= 8.86, SD= 3.89$) also yielded higher scores on Traumatic Avoidance than males ($M= 8.01, SD= 4.03$). One-way ANOVA revealed that gender had an effect on IDAS-II Ordering [$F(1, 708)= 19.85, p < .001$] and Checking scales [$F(1, 708)= 17.03, p < .001$]. Females revealed ($M= 10.97, SD= 4.12$) higher scores on Ordering

than males ($M= 9.69, SD= 3.75$). Females ($M= 13.80, SD= 6.21$) had higher scores on Checking compared to males ($M= 11.82, SD= 5.43$). ANOVA results for the effect of gender on IDAS-II scales were presented in Table 3.3.

Table 3. 3. One-Way Analyses of Variance (ANOVA) Results for IDAS Scales by Gender

IDAS-II Scales	<i>df</i>	<i>F</i>	η^2	<i>CI (95%)</i>	<i>p</i>
1 Dysphoria	1	4.40	.01	18.05-19.18	.05
2 Lassitude	1	11.74	.02	13.02-13.77	.01
3 Insomnia	1	.21	.00	11.50-12.20	.65
4 Suicidality	1	.08	.00	1.67-1.87	.78
5 Appetite Loss	1	1.78	.00	5.70-6.08	.18
6 Appetite Gain	1	5.19	.01	5.72-6.12	.02
7 Well-being	1	2.16	.00	22.51-23.47	.14
8 Ill-Temper	1	1.38	.00	9.02-9.70	.24
9 Mania	1	3.76	.01	9.50-10.05	.05
10 Euphoria	1	1.58	.00	9.59-10.21	.21
11 Panic	1	2.45	.00	10.65-11.38	.12
12 Claustrophobia	1	7.30	.01	6.40-6.96	.01
13 Traumatic Intrusions	1	10.30	.01	7.37-7.94	.01
14 Traumatic Avoidance	1	7.29	.01	8.30-8.88	.01
15 Checking	1	3.43	.01	5.96-6.38	.06
16 Ordering	1	15.85	.02	10.26-10.86	.00
17 Cleaning	1	17.03	.02	12.71-13.60	.00
18 Social Anxiety	1	.58	.00	9.50-10.18	.45

One-way ANOVA revealed that marital status had a significant effect on Dysphoria [$F(3, 699)= 8.27, p< .001$]. Post-Hoc comparisons using Tukey’s HSD test indicated that single individuals ($M= 19.65, SD= 8.01$) revealed higher scores on Dysphoria than married individuals ($M= 16.71, SD= 6.14$). One-way ANOVA revealed that marital status had a significant effect on Lassitude [$F(3, 699)= 7.43, p< .001$]. Tukey’s HSD test showed that single individuals ($M= 14.03, SD= 5.13$) revealed higher scores on Lassitude than married individuals ($M= 12.19, SD= 4.61$). One-way ANOVA revealed that marital status had a significant effect on Appetite

Gain [$F(3, 699)= 4.36, p < .005$]. HSD test showed that single individuals ($M= 6.18, SD= 2.87$) revealed higher scores on Appetite Gain compared to married individuals ($M= 5.40, SD= 2.34$). One-way ANOVA revealed that marital status had a significant effect on Ill-Temper [$F(3, 699)= 6.22, p < .001$]. Tukey's HSD test showed that single individuals ($M= 9.88, SD= 4.93$) revealed higher scores on Ill-Temper than married individuals ($M= 5.40, SD= 2.34$). One-way ANOVA revealed that marital status had a significant effect on Mania [$F(3, 699)= 8.98, p < .001$]. Tukey's HSD test indicated that single individuals ($M= 10.25, SD= 3.81$) yielded higher scores on Mania than married individuals ($M= 8.85, SD= 3.16$). One-way ANOVA revealed that marital status had a significant effect on Euphoria [$F(3, 699)= 7.21, p < .001$]. Tukey's HSD test showed that single individuals ($M= 10.48, SD= 4.44$) revealed higher scores on Euphoria compared to married individuals ($M= 9.01, SD= 3.59$). One-way ANOVA revealed that marital status had a significant effect on Panic [$F(3, 699)= 4.22, p < .01$]. Tukey's HSD test indicated that single individuals ($M= 11.41, SD= 5.32$) yielded higher scores on Panic than married individuals ($M= 10.13, SD= 3.83$). One-way ANOVA revealed that marital status had a significant effect on Claustrophobia [$F(3, 699)= 4.05, p < .01$]. Tukey's HSD test indicated that single individuals ($M= 6.94, SD= 3.96$) revealed higher scores on Claustrophobia compared to married individuals ($M= 6.13, SD= 3.36$). One-way ANOVA revealed that marital status had a significant effect on Traumatic Intrusions [$F(3, 699)= 11.39, p < .001$]. Tukey's HSD test showed that single individuals ($M= 8.25, SD= 4.06$) revealed higher scores on Traumatic Intrusions than married individuals ($M= 6.57, SD= 2.98$). One-way ANOVA revealed that marital status had a significant effect on Traumatic Avoidance [$F(3, 699)= 5.72, p < .001$]. Tukey's HSD test showed that single individuals ($M= 9.08, SD= 4.19$) yielded higher scores on Traumatic Avoidance than

married individuals ($M= 7.81, SD= 3.46$). One-way ANOVA revealed that marital status had a significant effect on Social Anxiety [$F(3, 699)= 5.63, p< .001$]. Tukey’s HSD test indicated that single individuals ($M= 10.16, SD= 4.86$) revealed higher scores on Social Anxiety compared to married individuals ($M= 9.15, SD= 3.80$). Other comparisons were not significant, $p< .05$. ANOVA results for the effect of marital status on IDAS-II scales were presented in Table 3.4.

Table 3. 4. One-Way Analyses of Variance (ANOVA) Results for IDAS Scales by Marital Status

IDAS-II Scales	<i>df</i>	<i>F</i>	η^2	<i>CI (95%)</i>	<i>p</i>
1 Dysphoria	3	8.28	.03	17.99-19.12	.00
2 Lassitude	3	7.43	.03	12.98-13.73	.00
3 Insomnia	3	2.11	.01	11.49-12.20	.10
4 Suicidality	3	.96	.00	1.67-1.87	.41
5 Appetite Loss	3	1.00	.00	5.71-6.13	.39
6 Appetite Gain	3	4.36	.02	5.68-6.08	.01
7 Well-being	3	1.11	.01	22.52-23.49	.35
8 Ill-Temper	3	6.22	.03	8.97-9.66	.00
9 Mania	3	8.98	.04	9.47-10.02	.00
10 Euphoria	3	7.21	.03	9.59-10.21	.00
11 Panic	3	4.22	.02	10.60-11.33	.01
12 Claustrophobia	3	4.05	.02	6.37-6.93	.01
13 Traumatic Intrusions	3	11.40	.05	7.36-7.93	.00
14 Traumatic Avoidance	3	5.72	.02	8.30-8.88	.00
15 Checking	3	1.78	.01	5.93-6.36	.15
16 Ordering	3	2.12	.01	10.23-10.83	.10
17 Cleaning	3	.50	.00	12.70-13.59	.69
18 Social Anxiety	3	5.63	.02	9.46-10.15	.00

One-way ANOVA revealed that work status had a significant effect on Dysphoria [$F(3, 688)= 8.02, p< .001$]. Post-Hoc comparisons using Tukey’s HSD test indicated that individuals who have a job ($M= 17.70, SD= 7.23$) yielded lower levels of Dysphoria symptoms compared to individuals who do not have a job ($M= 19.88, SD= 8.01$). One-way ANOVA revealed that work status had a significant effect on Lassitude [$F(3, 688)= 6.73, p< .001$]. Tukey’s HSD test showed that

individuals who have a job ($M= 12.96, SD= 4.84$) revealed lower scores on Lassitude compared to individuals who do not have a job ($M= 14.09, SD= 5.33$). One-way ANOVA revealed that work status had a significant effect on Ill-Temper [$F(3, 688)= 7.89, p< .001$]. Tukey's HSD test indicated that individuals who have a job ($M= 8.80, SD= 4.31$) yielded lower scores on Ill-Temper than individuals who do not have a job ($M= 10.14, SD= 4.99$). One-way ANOVA revealed that work status had a significant effect on Mania [$F(3, 688)= 5.33, p< .05$]. Tukey's HSD test indicated that individuals who have a job ($M= 9.44, SD= 3.66$) revealed lower scores on Mania compared to individuals who do not have a job ($M= 10.23, SD= 3.82$). One-way ANOVA revealed that work status had a significant effect on Panic [$F(3, 688)= 6.50, p< .001$]. Tukey's HSD test showed that individuals who have a job ($M= 10.35, SD= 4.15$) revealed lower level of Panic symptoms compared to individuals who do not have a job ($M= 11.74, SD= 5.68$). One-way ANOVA revealed that work status had a significant effect on Claustrophobia [$F(3, 688)= 4.82, p< .01$]. Tukey's HSD test indicated that individuals who have a job ($M= 6.21, SD= 3.48$) yielded lower scores on Claustrophobia compared to individuals who do not have a job ($M= 7.12, SD= 3.99$). One-way ANOVA revealed that work status had a significant effect on Traumatic Intrusions [$F(3, 688)= 15.05, p< .001$]. Tukey's HSD test indicated that individuals who have a job ($M= 6.96, SD= 3.41$) revealed lower scores on Traumatic Intrusions than individuals who do not have a job ($M= 8.49, SD= 4.07$). One-way ANOVA revealed that work status had a significant effect on Traumatic Avoidance [$F(3, 688)= 4.43, p< .05$]. Tukey's HSD test indicated that individuals who have a job ($M= 8.20, SD= 4.09$) yielded lower scores on Traumatic Avoidance compared to individuals who do not have a job ($M= 9.09, SD= 3.82$). One-way ANOVA revealed that work status had a significant effect on Checking [$F(3, 688)= 5.05, p< .05$].

Tukey's HSD test showed that individuals who have a job ($M= 5.91, SD= 2.74$) revealed lower scores on Checking than individuals who do not have a job ($M= 5.54, SD= 3.02$). One-way ANOVA revealed that work status had a significant effect on Cleaning [$F(3, 688)= 6.29, p< .001$]. Tukey's HSD test indicated that individuals who have a job ($M= 12.37, SD= 5.79$) revealed lower level of Cleaning symptoms compared to individuals who do not have a job ($M= 14.05, SD= 6.32$). One-way ANOVA revealed that work status had a significant effect on Social Anxiety [$F(3, 688)= 6.37, p< .01$]. Tukey's HSD test showed that individuals who have a job ($M= 9.34, SD= 4.27$) revealed lower scores on Social Anxiety than individuals who do not have a job ($M= 10.51, SD= 4.96$).

Table 3. 5. One-Way Analyses of Variance (ANOVA) Results for IDAS Scales by Work Status

IDAS-II Scales	<i>df</i>	<i>F</i>	η^2	<i>CI (95%)</i>	<i>p</i>
1 Dysphoria	2	8.02	.02	18.03-19.18	.00
2 Lassitude	2	6.73	.02	13.03-13.79	.00
3 Suicidality	2	1.58	.01	1.67-1.88	.21
4 Appetite Loss	2	2.93	.01	5.70-6.09	.05
5 Appetite Gain	2	2.76	.01	5.70-6.11	.06
6 Well-being	2	0.57	.00	22.49-23.47	.57
7 Ill-Temper	2	7.89	.02	9.00-9.69	.00
8 Mania	2	5.33	.02	9.51-10.07	.01
9 Euphoria	2	2.33	.01	9.58-10.20	.01
10 Panic	2	6.50	.02	10.60-11.34	.00
11 Claustrophobia	2	4.82	.01	6.38-6.95	.01
12 Traumatic Intrusions	2	15.05	.04	7.35-7.93	.00
13 Traumatic Avoidance	2	4.43	.01	8.28-8.88	.01
14 Checking	2	5.05	.01	5.94-6.37	.01
15 Ordering	2	2.73	.01	10.27-10.88	.07
16 Cleaning	2	6.29	.02	12.71-13.62	.00
17 Social Anxiety	2	6.37	.02	9.50-10.19	.00
18 Insomnia	2	4.32	.01	11.46-12.17	.01

One-way ANOVA revealed that work status had a significant effect on Insomnia [$F(3, 688) = 4.32, p < .05$]. Tukey's HSD test indicated that individuals who have a job ($M = 11.34, SD = 4.46$) revealed lower scores on Insomnia compared to individuals who do not have a job ($M = 12.34, SD = 5.11$). ANOVA results for the effect of work status IDAS-II scales were presented in Table 3.5.

One-way ANOVA revealed that perceived level of income had a significant effect only on Well-being [$F(5, 663) = 5.06, p < .001$]. Post-Hoc comparisons using Tukey's HSD test indicated that individuals who perceive their income as very high ($M = 30.29, SD = 6.82$) revealed higher scores on Well-being compared to individuals who perceive their income as low ($M = 20.67, SD = 6.55$), $p < .01$; below middle ($M = 22.25, SD = 6.48$) and middle ($M = 22.67, SD = 6.24$), $p < .05$. Tukey's HSD test indicated that individuals who perceive their income as low ($M = 20.67, SD = 6.55$) revealed lower scores on Well-being compared to individuals who perceive their income as above middle ($M = 24.15, SD = 6.59$), $p < .01$. ANOVA results of the effect of perceived level of income on IDAS-II scales were presented in Table 3.6.

One-way ANOVA revealed that level of education had an effect on Ordering [$F(4, 689) = 2.43, p < .001$] and Cleaning [$F(4, 689) = 4.05, p < .01$], Insomnia [$F(4, 689) = 3.03, p < .05$], Apatite Gain [$F(4, 689) = 2.71, p < .05$]. Post-Hoc comparisons using Tukey's HSD test indicated that individuals who are graduated from primary school ($M = 12.39, SD = 4.67$) yielded higher scores on Ordering compared to individuals who are graduated from master degree or higher ($M = 9.60, SD = 3.55$), $p < .05$.

Table 3. 6. One-Way Analyses of Variance (ANOVA) Results of IDAS Scales by Perceived Level of Income

IDAS-II Scales	<i>df</i>	<i>F</i>	η^2	<i>CI (95%)</i>	<i>p</i>
1 Dysphoria	5	.973	.007	17.91-19.07	.43
2 Lassitude	5	1.634	.012	12.85-13.62	.15
3 Insomnia	5	1.685	.013	11.38-12.10	.14
4 Suicidality	5	1.424	.011	1.64-1.84	.21
5 Appetite Loss	5	1.432	.011	5.68-6.08	.21
6 Appetite Gain	5	1.573	.012	5.64-6.05	.17
7 Well-being	5	5.062	.037	22.49-23.48	.01
8 Ill-Temper	5	1.744	.013	8.96-9.65	.12
9 Mania	5	.253	.002	9.42-9.98	.94
10 Euphoria	5	.686	.005	9.49-10.12	.64
11 Panic	5	.513	.004	10.51-11.25	.77
12 Claustrophobia	5	.951	.007	6.27-6.83	.45
13 Traumatic Intrusions	5	.470	.004	7.31-7.89	.80
14 Traumatic Avoidance	5	.692	.005	8.17-8.76	.63
15 Checking	5	.240	.002	5.86-6.29	.94
16 Ordering	5	.803	.006	10.12-10.73	.55
17 Cleaning	5	.185	.001	12.57-13.49	.97
18 Social Anxiety	5	2.390	.018	9.41-10.10	.04

Tukey's HSD test also indicated that individuals who are graduated from primary school ($M= 12.39, SD= 4.67$) revealed higher scores on symptoms of Cleaning compared to individuals who are graduated from master degree or higher ($M= 9.60, SD= 3.55$), $p < .01$. Also individuals who are graduated from high school ($M= 12.17, SD= 4.78$) also differed from to individuals who are graduated from master degree or higher ($M= 12.39, SD= 4.67$), $p < .05$. Tukey's HSD test also revealed grad individuals revealed lower scores on Insomnia than individuals who are graduated from primary ($M= 12.39, SD= 4.67$) and high school students ($M= 12.17, SD= 4.78$), $p < .05$. However, Post-Hoc Test did not reveal any difference on Appetite Gain. ANOVA results of the effect of level of education on IDAS-II scales were presented in 3.7.

Table 3. 7. One-Way Analyses of Variance (ANOVA) Results of IDAS Scales by Level of Education

IDAS-II Scales	<i>df</i>	<i>F</i>	η^2	<i>CI (95%)</i>	<i>p</i>
1 Dysphoria	4	1.10	0.01	18.03-19.18	0.36
2 Lassitude	4	1.53	0.01	13.03-13.79	0.19
3 Suicidality	4	1.56	0.01	1.67-1.88	0.18
4 Appetite Loss	4	2.37	0.01	5.70-6.09	0.05
5 Appetite Gain	4	2.71	0.02	5.70-6.11	0.03
6 Well-being	4	1.88	0.01	22.49-23.47	0.11
7 Ill-Temper	4	1.85	0.01	9.00-9.69	0.12
8 Mania	4	0.74	0.00	9.51-10.07	0.56
9 Euphoria	4	0.95	0.01	9.58-10.20	0.43
10 Panic	4	1.37	0.01	10.60-11.34	0.24
11 Claustrophobia	4	1.62	0.01	6.38-6.95	0.17
12 Traumatic Intrusions	4	1.01	0.01	7.35-7.93	0.40
13 Traumatic Avoidance	4	1.85	0.01	8.28-8.88	0.12
14 Checking	4	1.45	0.01	5.94-6.37	0.22
15 Ordering	4	2.43	0.01	10.27-10.88	0.05
16 Cleaning	4	4.05	0.02	12.71-13.62	0.01
17 Social Anxiety	4	2.38	0.01	9.50-10.19	0.05
18 Insomnia	4	3.034	0.02	11.46-12.17	0.02

3.3. Reliability Analysis

3.3.1. Internal Consistencies

Pearson Product Moment Correlation analyses were performed to examine correlations between IDAS-II Scales in both normal and combined samples.

Correlations ranged between .04 (between Dysphoria and Euphoria) and .77

(between Dysphoria and Lassitude) in normal sample. Correlations between IDAS-II

subscales in normal sample were presented in Table 3.8.

Table 3. 8. Pearson Correlations between IDAS-II Subscales in Normal Sample

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1 Dysphoria	1																		
2 Lassitude	.77**	1																	
3 Insomnia	.63**	.53**	1																
4 Suicidality	.53**	.47**	.41**	1															
5 Appetite Loss	.47**	.36**	.53**	.31**	1														
6 Appetite Gain	.27**	.38**	.20**	.15**		1													
7 Well-Being	-.36**	-.19**	-.19**	-.17**	-.09*	.05	1												
8 Ill Temper	.78**	.65**	.57**	.49**	.38**	.29**	-.26**	1											
9 Mania	.42**	.44**	.36**	.28**	.31**	.30**	.19**	.38**	1										
10 Euphoria	.04	.16**	.11**	.12**	.16**	.22**	.56**	.10*	.53**	1									
11 Panic	.71**	.62**	.60**	.63**	.40**	.22**	-.21**	.70**	.41**	.14**	1								
12 Claustrophobia	.54**	.48**	.43**	.49**	.31**	.26**	-.12**	.46**	.44**	.20**	.56**	1							
13 Trauma Intrusions	.71**	.59**	.53**	.55**	.40**	.22**	-.16**	.65**	.39**	.16**	.63**	.46**	1						
14 Trauma Avoidance	.45**	.44**	.34**	.36**	.36**	.20**	.09*	.37**	.45**	.39**	.37**	.45**	.57**	1					
15 Checking	.45**	.49**	.36**	.32**	.36**	.24**	.08*	.37**	.59**	.38**	.44**	.52**	.42**	.50**	1				
16 Ordering	.39**	.46**	.35**	.25**	.33**	.24**	.16**	.33**	.55**	.43**	.36**	.48**	.37**	.51**	.72**	1			
17 Cleaning	.31**	.36**	.34**	.29**	.33**	.19**	.07	.31**	.47**	.36**	.32**	.52**	.30**	.40**	.57**	.60**	1		
18 Social Anxiety	.64**	.53**	.49**	.60**	.36**	.31**	-.16**	.56**	.39**	.19**	.63**	.61**	.59**	.42**	.46**	.42**	.40**	1	

* $p < .05$, ** $p < .001$, $N=713$

Correlations between IDAS-II scales ranged between .01 (between Well-being and Checking) and .80 (between Dysphoria and Lassitude) in combined sample.

Correlations between IDAS-II scales in combined sample were presented in Table 3.9.

Internal Consistencies (Coefficient Alphas) and Average Interitem Correlations (AICs) for IDAS-II Scales were calculated both in normal and combined samples. Majority of Cronbach Alpha coefficients were above .80 in combined sample, indicating good level of internal consistency. Coefficients for Checking and Ordering were high with alpha values of .79 and .76, respectively. The alpha values for Appetite Loss and Appetite Gain were a bit lower .71 and .73, respectively. But still coefficients were in good range in terms of internal consistency. In normal sample, eventhough still majority of the alphas were above .80, coefficients were lower compared to combined sample. Different from combined sample Lassitude and Insomnia also revealed slightly lower coefficients with alpha values of .79 and .78, respectively. Coefficient alphas were .68 and .67 for Mania in combined and normal sample, respectively but they are still in acceptable range. However alpha value for Suicidality was .44 for both sample and yielded poor internal consistency. Cronbach's Alpha coefficients and Average Interitem Correlations for both normal and combined samples were presented in Table 3.10.

Table 3. 9. Pearson Correlations between IDAS-II Subscales in Combined Sample

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 Dysphoria	1																	
2 Lassitude	.80**	1																
3 Insomnia	.66**	.56**	1															
4 Suicidality	.61**	.51**	.48**	1														
5 Appetite Loss	.47**	.37**	.53**	.35**	1													
6 Appetite Gain	.26**	.38**	.19**	.20**	-.13**	1												
7 Well-Being	-.46**	-.29**	-.27**	-.30**	-.17**	.03	1											
8 Ill Temper	.77**	.67**	.58**	.57**	.37**	.26**	-.34**	1										
9 Mania	.40**	.42**	.35**	.30**	.27**	.25**	.15**	.37**	1									
10 Euphoria	-.03	.09**	.06	.05	.09*	.20**	.56**	.04	.51**	1								
11 Panic	.79**	.69**	.65**	.66**	.43**	.20**	-.35**	.73**	.30**	.05	1							
12 Claustrophobia	.70**	.60**	.52**	.60**	.36**	.29**	-.25**	.58**	.41**	.14**	.66**	1						
13 Trauma Intrusions Trauma	.61**	.53**	.50**	.51**	.33**	.22**	-.23**	.52**	.38**	.17**	.65**	.64**	1					
14 Avoidance	.73**	.61**	.56**	.56**	.39**	.22**	-.24**	.64**	.37**	.08*	.65**	.60**	.49**	1				
15 Checking	.47**	.45**	.38**	.29**	.34**	.20**	.01	.37**	.37**	.31**	.40**	.42**	.45**	.54**	1			
16 Ordering	.49**	.49**	.39**	.32**	.34**	.21**	-.01	.43**	.54**	.31**	.47**	.51**	.53**	.40**	.47**	1		
17 Cleaning	.42**	.46**	.38**	.28**	.29**	.24**	.08*	.36**	.54**	.38**	.40**	.48**	.49**	.38**	.48**	.71**	1	
18 Social Anxiety	.37**	.40**	.36**	.29**	.29**	.20**	-.03	.33**	.44**	.27**	.37**	.44**	.52**	.32**	.38**	.58**	.60**	1

Note: * $p < .05$, ** $p < .001$ $N=921$

Table 3. 10. Cronbach's Alpha coefficients and Average Interitem Correlations (AICs) for IDAS-II Scales in Normal and Combined Samples

IDAS Scale	Normal		Combined	
	α	AIC	α	AIC
General Depression	.90	.33	.91	.33
Dysphoria	.88	.45	.88	.45
Lassitude	.79	.38	.81	.41
Insomnia	.78	.37	.81	.41
Suicidality	.44	.38	.44	.38
Appetite Loss	.70	.44	.71	.45
Appetite Gain	.72	.46	.73	.48
Well-Being	.85	.41	.86	.42
Ill Temper	.86	.56	.88	.60
Mania	.67	.30	.68	.30
Euphoria	.82	.48	.81	.47
Panic	.85	.43	.83	.43
Social Anxiety	.84	.47	.85	.53
Claustrophobia	.84	.56	.84	.56
Traumatic Intrusions	.84	.56	.87	.62
Traumatic Avoidance	.85	.58	.84	.56
Checking	.76	.51	.79	.55
Ordering	.75	.38	.76	.39
Cleaning	.86	.47	.88	.51

Note: N= Normal Sample ($N= 713$); C= Combined Sample ($N= 208$)

Average Inter-item correlations should be moderate in range and with the values falling between .15 and .50 (Clark & Watson, 1995). As expected, majority of AICs fall between .15 and .50 in both normal and combined sample. Ill Temper, Claustrophobia, Traumatic Intrusions, Traumatic Avoidance and Checking revealed slightly higher values in both combined and normal sample. AIC value for Cleaning (.51) and Social Anxiety (.53) were slightly higher in combined sample but AICs in normal sample was .47 for both scale.

IDAS-II was found to be highly reliable for normal sample. Cronbach's Alpha coefficient for 99 items in normal sample was .96 indicating that the items have high internal consistency. According to if item deleted option, there was no need to delete any item since the Cronbach alpha scores ranged between .959 and .961. Items of the IDAS-II splitted into 2 halves and Cronbach alpha coefficients were found to be .94 and .93 for the first and second half, respectively. Spearman-Brown correlation coefficient between these two forms was found to be .83.

Cronbach's Alpha coefficient for 99 items in combined sample was .96 indicating that the items have relatively high internal consistency. There was no need to delete any item since the Cronbachalpha scores ranged between .951 and .952. Items of the IDAS-II splitted into 2 halves and Cronbach alpha coefficients were found to be .94 and .92 for the first and second half, respectively. Spearman-Brown correlation Coefficient between these two forms was found to be .83.

3.3.2. Test- Retest Reliability

To assess test-retest reliability, 100 healthy participants (age range= 20-61, $M = 26.91$, $SD = 9.72$) were reassessed 4 week after initial assessment to evaluate retest reliability of IDAS-II. 75 of the 99 correlations were found to be significant. 59 of the 99 correlations were significant at $p < .001$ and 16 of the correlations were significant at $p < .05$ whereas 24 of the correlations were failed yield significant correlations. Test-retest correlations of 99 items of IDAS-II can be seen in Table 3.11.

Table 3. 11. Test-retest Correlation Coefficients for IDAS-II Items

Item number	Test-retest correlations	Item number	Test-retest correlations
1	.27**	51	.31**
2	.35**	52	.09
3	.27**	53	.10
4	.39**	54	.16
5	.31**	55	.30**
6	.35**	56	.42**
7	.50**	57	.37**
8	.27**	58	.16
9	.02	59	.25*
10	.10	60	.22*
11	.44**	61	.24*
12	.37**	62	.31**
13	.18	63	.11
14	.41**	64	.31**
15	.28**	65	.24*
16	.30**	66	.41**
17	.60**	67	.23*
18	.04	68	.34**
19	.13	69	.51**
20	.12	70	.30**
21	.28**	71	.50**
22	.13	72	.22*
23	.19	73	.26*
24	.19	74	.35**
25	.39**	75	.35**
26	.16	76	.30**
27	.36**	77	.20*
28	.45**	78	.25*
29	.25*	79	.27**
30	.04	80	.08
31	.28**	81	.26**
32	.44**	82	.11
33	.21*	83	.18
34	.45**	84	.38**
35	.37**	85	.38**
36	.29**	86	.40**
37	.49**	87	.35**
38	-.03	88	.23*
39	.31**	89	.35**
40	.36**	90	.32**
41	.00	91	.28**
42	.36**	92	.15
43	.22*	93	.27**

Item number	Test-retest correlations	Item number	Test-retest correlations
44	.33**	94	.35**
45	.40**	95	.36**
46	.33**	96	.41**
47	.23*	97	.31**
48	.36**	98	.18
49	.12	99	.22*
50	.25*		

Note: $N = 100$ * $p < .05$, *** $p < .001$

Retest correlations for IDAS-II total score, General Depression, Dysphoria, Insomnia, Suicidality, Well-being, Euphoria, Ill-Temper, Mania, Panic, Claustrophobia, Traumatic Intrusion, Traumatic Avoidance, Checking, Ordering and Cleaning scales were found to be significant at $p < .001$. Retest correlations for Lassitude and Appetite Loss Scales were significant at $p < .05$ whereas retest correlations for Appetite Gain and Social Anxiety scales were not significant. Test retest correlations were presented in Table 3.12.

Table 3. 12. Test-Retest Correlation Coefficients for IDAS-II Scales

IDAS-II Scales	Test-retest correlations
General Depression	.40**
Dysphoria	.36**
Lassitude	.22*
Insomnia	.56**
Suicidality	.36**
Appetite Loss	.22*
Appetite Gain	.20
Well-being	.28**
Ill-Temper	.47**
Mania	.34**
Euphoria	.26**
Panic	.45**
Social Anxiety	.11
Claustrophobia	.40**
Traumatic Intrusion	.50**
Traumatic Avoidance	.38**
Checking	.38**

Table 3.12 (Continued)	
IDAS-II Scales	Test-retest correlations
Ordering	.56**
Cleaning	.41**

*Note: N = 100 *p < .05, ***p < .001*

3.3. Validity Analysis

3.3.1. Construct Validity

Following the original study (Watson, 2012) Principle factor extraction with promax rotation was performed on 99 items of IDAS-II to assess the validity of the inventory. Principle component extraction was used to understand number of factors, multicollinearity and factorability of IDAS-II. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy test was found to be satisfactory with the value of .948. Barlett's Test of Sphericity was significant ($\chi^2(4851) = 39322.82, p < .001$).

Factor structures based on eigenvalues and scree-plot were examined. However, Principle Component Analysis based on the original structure revealed more meaningful results. Therefore three factors were extracted based on the original factor structure. With the exception of Social Anxiety subscale, Turkish version of IDAS-II factor structure was turned out to be very similar to original factor structure. All Social Anxiety items consistently loaded on the first factor. And four items of Mania (IDAS 63, 77, 83 and 87) had loaded on both first and second factor but since it is meaningful for them to load on the first factor, they were retained in the first factor. One Appetite Loss (IDAS 1) and one Traumatic Avoidance (IDAS 73) item had loaded on both first and second factor. Since it is meaningful for them to load on first factor, they were retained in second factor. One Mania item only loaded on third

factor however it was meaningful for this item to load on the first factor so this item were included in first factor in further analyses. Factor loadings of each item were presented in Table 3.13.

Therefore first factor composed of items 48, 40, 35, 45, 34, 61, 8, 31, 42, 62, 44, 14, 39, 12, 37, 21, 51, 56, 55, 58, 5, 41 46, 57, 33, 36, 47, 49, 20, 28, 9, 6, 16, 80, 54, 32, 30, 15, 93, 43, 18, 11, 99, 60, 52, 13, 7, 17, 38, 2, 29, 26, 71, 25, 63, 4, 19, 24, 22 and 67 and explained %23.74 of the total variance. The first factor was turned out to be a general factor and it was named as ‘Distress’ as it is in the original study. Second factor composed of items 86, 76, 81, 85, 91, 98, 66, 70, 75, 94, 84, 74, 69, 68, 95, 82, 96, 89, 79, 65 and 90 and explained %16.38 of the total variance. The second factor was named as ‘Obsessions/Fear’ as it is in the original study. Third factor was composed of items 64, 97, 88, 72, 27, 53, 50, 23, 78, 10, 59, 3 and 92 explained %7.21 of the total variance. The third factor named as ‘Positive Mood’ as it is in the original study.

Table 3. 13. Factor Loadings if IDAS-II Items in Normal Sample

Item numbers	Factors			Item numbers	Factors		
	I.	II.	III.		I.	II.	III.
IDAS 48	.778			IDAS 29	.384		
IDAS 40	.732			IDAS 26	.383		
IDAS 35	.724			IDAS 71	.361		
IDAS 45	.704			IDAS 25	.354		
IDAS 34	.708			IDAS 63	.317		
IDAS 61	.706			IDAS 4	.308		
IDAS 8	.705			IDAS 19	.270		

Table 3.13. (Continued)

Item Numbers	Factors			Item Numbers	Factors		
	I	II	III		I	II	III
	.704			IDAS 24	.243		
IDAS 42	.693			IDAS 22	.240		
IDAS 62	.680			IDAS86		.725	
IDAS 44	.679			IDAS 76		.704	
IDAS 14	.672			IDAS 81		.674	
IDAS 39	.669			IDAS 85		.661	
IDAS 12	.666			IDAS 91		.660	
IDAS 37	.658			IDAS 98		.659	
IDAS 21	.651			IDAS 66		.644	
IDAS 51	.650			IDAS 70		.641	
IDAS 56	.649			IDAS 75		.641	
IDAS 55	.647			IDAS 94		.633	
IDAS 58	.646			IDAS 84		.626	
IDAS 5	.633			IDAS 74		.612	
IDAS 41	.626			IDAS 69		.600	
IDAS 46	.620			IDAS 68		.593	
IDAS 57	.617			IDAS 95		.585	
IDAS 33	.610			IDAS 82		.549	
IDAS 36	.605			IDAS 87		.542	
IDAS 47	.596			IDAS 96		.538	
IDAS 49	.596			IDAS 83		.535	
IDAS 20	.588			IDAS 89		.507	
IDAS 28	.583			IDAS 79		.497	
IDAS 9	.582			IDAS 77		.476	
IDAS 6	.580			IDAS 65		.475	
IDAS 16	.576			IDAS 90		.442	
IDAS 80	.572			IDAS 73		.419	

Table 3.13. (Continued)

Item Numbers	Factors			Item Numbers	Factors		
	I	II	III		I	II	III
IDAS 54	.565			IDAS 1	.321		
IDAS 32	.564			IDAS 64			.697
IDAS 30	.563			IDAS 97			.693
IDAS 15	.557			IDAS 88			.669
IDAS 93	.555			IDAS 72			.646
IDAS43	.534			IDAS 27			.637
IDAS 18	.533			IDAS 53			.633
IDAS 11	.533			IDAS 50			.618
IDAS 99	.528			IDAS 23			.618
IDAS 60	.507			IDAS 78			.616
IDAS 52	.488			IDAS 10			.604
IDAS 13	.479			IDAS 59			.583
IDAS 7	.469			IDAS 3			.546
IDAS 17	.454			IDAS 92			.533
IDAS 38	.421			IDAS 67			.493
IDAS 2	.407						

Note: N=713

As a summary, IDAS-II composed of 99 items, 3 factors and 18 subscales. IDAS-II first factor 'Distress' was composed of Dysphoria, Ill-Temper, Panic, Traumatic Intrusions, Insomnia, Lassitude, Social Anxiety, Suicidality, Traumatic Avoidance, Appetite Loss, Mania and Appetite Gain scales. The second factor 'Obsessions/Fear' was composed of Ordering, Checking and Cleaning and Claustrophobia scales. The last factor 'Positive Mood' was marked by Well-being and Euphoria. As we mentioned before, Watson and colleagues (Watson et al., 2007) generated General Depression Scale that consists of all Dysphoria items and two items from each of two items from each of Suicidality, Lassitude, Insomnia, Appetite

Loss and Well-being. We also carried out reliability analysis for General Depression Scale.

3.3.2. Convergent Validity

To test convergent validity, correlations between IDAS-II scales and both BDI and BAI were investigated in both normal sample and combined sample. General Depression, Dysphoria, Lassitude, Appetite Loss and Wellbeing scales revealed stronger correlations with the BDI than with the BAI in both samples ($r \geq .17$). Conversely, Panic, Claustrophobia, Social Anxiety, Checking, Ordering and Cleaning revealed stronger correlations with the BAI than with the BDI in both samples ($r \geq .30$). Suicidality, Appetite Gain and Ill-Temper showed stronger correlations with the BDI than the BAI in combined sample ($r \geq .19$). Suicidality, Appetite Gain, Ill-Temper and Traumatic Avoidance showed stronger correlations with the BAI than the BDI in normal sample ($r \geq .17$). Traumatic Intrusions and Traumatic Avoidance revealed stronger correlation with the BAI than the BDI in combined sample ($r \geq .38$). Traumatic Intrusions revealed same correlations with the BDI and the BAI in normal sample ($r = .61$). Correlations of IDAS-II scales with the BDI and the BAI were presented in Table 3.14.

Convergent correlations of OCD scales were assessed via Maudsley Obsessive Compulsive Inventory in both normal and combined sample. Results for normal and combined sample were presented respectively. IDAS-II Cleaning significantly related to Cleaning subscale of MOCI, $r = .62, p < .001$. Checking revealed significantly correlated with Checking subscale of MOCI, $r = .50, p < .001$.

MOCI does not have counterpart for IDAS-II Ordering. But IDAS-II Ordering revealed highest correlation with Rumination subscale of MOCI, $r = .43, p < .001$. MOCI total score revealed highest correlation with IDAS-II Cleaning, $r = .60, p < .001$. Secondly, MOCI total score was correlated with IDAS-II Checking $r = .55, p < .001$. Thirdly, MOCI total score was related with IDAS-II Ordering $r = .51, p < .001$.

Table 3. 14. Correlations of IDAS-II Scales with BDI and BAI

Scale	Normal Sample (N= 713)		Combined Sample (N= 208)	
	BDI	BAI	BDI	BAI
General Depression	.74**	.66**	.78**	.71**
Dysphoria	.73**	.66**	.78**	.71**
Lassitude	.59**	.58**	.65**	.63**
Insomnia	.52**	.55**	.58**	.58**
Suicidality	.49**	.57**	.63**	.59**
Appetite Loss	.40**	.39**	.40**	.39**
Appetite Gain	.17**	.23**	.21**	.19**
Well-Being	-.41**	-.17**	-.50**	-.28**
Ill Temper	.64**	.66**	.66**	.67**
Mania	.28**	.41**	.27**	.39**
Euphoria	-.03	.18**	-.08*	.11**
Panic	.56**	.76**	.68**	.80**
Claustrophobia	.48**	.56**	.69**	.62**
Trauma Intrusions	.61**	.61**	.56**	.61**
Trauma Avoidance	.37**	.42**	.66**	.60**
Checking	.37**	.49**	.38**	.43**
Ordering	.33**	.45**	.38**	.51**
Cleaning	.30**	.41**	.36**	.46**
Social Anxiety	.54**	.60**	.35**	.42**

Note: ** $p < .001$. BDI= Beck Depression Inventory. BAI= Beck Anxiety Inventory.

Same pattern was also valid for combined sample. IDAS-II Cleaning significantly related to Cleaning subscale of MOCI, $r = .63, p < .001$. Checking revealed significantly correlated with Checking subscale of MOCI, $r = .53, p < .001$. MOCI does not have counterpart for IDAS-II Ordering. But IDAS-II Ordering revealed highest correlation with Rumination subscale of MOCI, $r = .45, p < .001$.

MOCI total score revealed highest correlation with IDAS-II Cleaning, $r = .64, p < .001$. Secondly, MOCI total score was correlated with IDAS-II Checking $r = .60, p < .001$. Thirdly, MOCI total score was related with IDAS-II Ordering $r = .55, p < .001$. Correlations among IDAS-II OCD scales and MOCI scores can be seen in Table 3.15.

Table 3. 15. Correlations between IDAS-II OCD Scales and Maudsley Obsessive Compulsive Inventory (MOCI) in normal (N) and combined (C) Sample

IDAS-II Scales	MOCI Total		MOCI Control		MOCI Cleaning		MOCI Slowness		MOCI Doubting		MOCI Rumination	
	N	C	N	C	N	C	N	C	N	C	N	C
	Cleaning	.60**	.64**	.40**	.48**	.62**	.63**	.41**	.53**	.41**	.47**	.42**
Checking	.55**	.60**	.50**	.53**	.36**	.46**	.40**	.48**	.44**	.44**	.44**	.50**
Ordering	.51**	.55**	.38**	.42**	.39**	.45**	.39**	.45**	.39**	.39**	.43**	.45**

Note: ** $p < .001$

Convergent correlations of PTSD scales were assessed via PTSD Check List-Civilian Version (PCL-C) in both normal and combined samples. In normal sample, IDAS-II Traumatic Intrusions Scale correlated with both PCL- C Hyperarousal and Traumatic Avoidance $r = .53, p < .001$. Also IDAS-II Traumatic Intrusions correlated with PCL-C Re-experience, $r = .53, p < .001$. IDAS-II Traumatic Avoidance Scale correlated with PCL-C Avoidance $r = .44, p < .001$. IDAS-II Traumatic Intrusions and Avoidance scale related with PCL-C Total score with correlation values of .59 and .45 respectively, $p < .001$.

In combined sample IDAS-II Traumatic Intrusions Scale revealed highest correlation with PCL-C Re-experience, $r = .60, p < .001$. IDAS-II Traumatic Avoidance Scale showed highest correlation with PCL-C Avoidance $r = .44, p < .001$. IDAS-II Traumatic Intrusions and Avoidance scale associated with PCL-C Total

score with correlation values of .64 and .46 respectively, $p < .001$. Correlations between IDAS-II PTSD scales and PCL-C scales were presented 3.16.

Table 3. 16. Correlations between IDAS-II PTSD Scales and PCL-C Scales

IDAS-II Scales	PCL-C Total		PCL-C Re- experience		PCL-C Avoidance		PCL-C Hyperarousal	
	N	C	N	C	N	C	N	C
Traumatic Intrusions	.59**	.64**	.52**	.60**	.53**	.57**	.53**	.52**
Traumatic Avoidance	.45**	.46**	.39**	.42**	.44**	.44**	.35**	.34**

Note: ** $p < .001$; Note: N= Normal Sample ($N= 713$); C= Combined Sample ($N= 208$)

Convergent correlations of IDAS-II Panic, Claustrophobia scales and Social Anxiety were examined with Beck Anxiety Inventory and Panic Agoraphobia scale in both normal and combined sample. In normal sample, IDAS-II Panic scale correlated with PAS total score and Panic Attack subscale with the correlation value of .46 and .45, $p < .001$, respectively. IDAS-II Panic Scale also correlated with BAI, $r = .76$, $p < .001$. IDAS-II Claustrophobia associated with Panic total score and Agoraphobic Avoidance subscale with the correlation value of .42 and .40, $p < .001$, respectively. IDAS-II Claustrophobia Scale also related with BAI, $r = .56$, $p < .001$. IDAS-II Social Anxiety correlated with BAI and PAS total scores with the correlation values of .60 and .42. Correlations between Social Anxiety and subscales of PAS were very similar with the correlation value of .33.

In combined sample, IDAS-II Panic scale correlated with PAS total score and Panic Attack subscale with the correlation values of .61 and .55, $p < .001$, respectively. IDAS-II Panic Scale also correlated with BAI, $r = .80$, $p < .001$. IDAS-II Claustrophobia correlated with Panic total score and Agoraphobic Avoidance subscale with the correlation value of .51 and .44, $p < .001$, respectively. IDAS-II Claustrophobia Scale also related with BAI, $r = .61$, $p < .001$. IDAS-II Social Anxiety

correlated with BAI and PAS total scores with the correlation value of .62 and .50. Correlations between Social Anxiety and subscales of PAS were very similar with the correlation value of .41. Correlations between IDAS-II Panic, Claustrophobia and Social Anxiety Scales and BDI, BAI, PAS Panic Attacks, PAS Agoraphobic Avoidance and PCL-C total scores were presented in Table 3.17 for both normal and combined sample.

Table 3. 17. Correlations between IDAS-II Panic, Claustrophobia and Social Anxiety Scales and BDI, BAI, PAS Panic Attacks, PAS Agoraphobic Avoidance and PCL-C total score in both normal and combined sample

IDAS Scales	BDI		BAI		PAS Panic Attacks		PAS Agoraphobic Avoidance		PCL-C Total	
	N	C	N	C	N	C	N	C	N	C
Panic	.56**	.68**	.76**	.80**	.45**	.55**	.35**	.46**	.55**	.61**
Claustrophobia	.48**	.56**	.76**	.61**	.32**	.41**	.40**	.44**	.54**	.54**
Social Anxiety	.54**	.61**	.76**	.62**	.34**	.40**	.37**	.41**	.61**	.60**

Note: ** $p < .001$; N= Normal Sample ($N= 713$); C= Combined Sample ($N= 208$)

Convergent correlation of IDAS-II Mania scale was assessed via Mood Disorder Questionnaire in both normal and combined sample. IDAS-II Mania Scale correlated with MDQ, $r = .45, p < .001$. Euphoria also related with MDQ with the correlation value of .39. In combined sample, IDAS-II Mania Scale correlated with MDQ $r = .45, p < .001$. IDAS-II Euphoria associated with MDQ with the correlation value of .40. Correlations between IDAS-II Mania and Euphoria scales and Mood Disorder Questionnaire were presented in 3.18.

Table 3. 18. Correlations between IDAS-II Mania and Euphoria scales and Mood Disorder Questionnaire (MDQ) in both normal and combined sample

IDAS-II Scales	(MDQ) Total Score	
	N	C
Mania	.45**	.45**
Euphoria	.39**	.40**

Note: ** $p < .001$; N= Normal Sample ($N= 713$); C= Combined Sample ($N= 208$)

3.3.3. Discriminant Validity

Depression and anxiety symptoms are not totally independent rather they are interrelated. We examined the degree to which IDAS-II scales diverges from other concepts that should be not be similar to. Therefore, discriminant validity of IDAS-II scales was examined in relation to other measures that do not tend to measure same construct. IDAS Dysphoria revealed lower correlations with Cleaning subscale of MOCI and Agoraphobic Avoidance and Anticipatory Anxiety subscale of PAS both in normal and combined samples ($r \leq .29$). Insomnia, Suicidality, Appetite Loss, Appetite Gain and Ill-Temper revealed lower correlations with MDQ, MOCI and PAS in both normal and combined sample ($r \leq .39$). However correlations were slightly higher in normal sample. Well-Being yielded smaller correlations with MDQ, MOCI, PAS and PCL-C ($r \leq |.26|$). Mania and Euphoria revealed lower correlations with MOCI, PAS and PCL-C in both samples ($r \leq .39$). Panic, Social Anxiety and Claustrophobia revealed lower correlations with MDQ in both combined ($r \leq .28$) and normal ($r \leq .41$) samples. Traumatic Intrusions and Traumatic Avoidance Scale revealed smaller correlations with Cleaning Doubting and Slowness subscales of MOCI in both samples ($r \leq .37$). Also, Cleaning, Checking and Ordering revealed smaller correlations with MDQ in both samples ($r \leq .38$).

In terms of discriminant validity, correlations between non-overlapping scales of IDAS-II were examined. The 10 specific scales of IDAS-II showed good discriminant validity with correlations generally in moderate range in both normal and combined sample. Only 9 of the 171 correlations were relatively high in normal sample with the correlation values that ranged from .63 (Dysphoria and Insomnia) to .78 (Dysphoria and Ill-temper). In combined sample only 13 of the 171 correlations were relatively high with the correlation values that ranged from .61 (Social Anxiety and Panic) and .77 (Dysphoria and Lassitude). All other correlation in both normal and combined sample was small or moderate in range, indicating discriminant validity of IDAS-II scales.

In addition, also 5 scales of IDAS-II- General Depression, Dysphoria, Lassitude, Appetite Loss and Wellbeing- revealed stronger correlations with the BDI than with the BAI in both samples. This result indicated that they tap contents that are related to depression than anxiety. Conversely, Panic, Claustrophobia, Social Anxiety, Checking, Ordering and Cleaning revealed stronger correlations with the BAI than with the BDI in both samples. This differential pattern indicates that the latter scales tap contents that are related to anxiety than depression.

Discriminant correlations of IDAS-II OCD scales were assessed via Maudsley Obsessive Compulsive Inventory both in normal and combined sample. As we mentioned correlations before, IDAS-II Cleaning showed highest correlation with Cleaning counterpart of MOCI also IDAS-II Checking showed highest correlation with Checking counterpart of MOCI than with any other subscales of MOCI, in both normal and combined sample. In terms of discriminant validity, all these correlations

were higher than correlations between any of IDAS-II OCD scales and BDI, BAI, MDQ, PAS, PTSD and their subscales with only one exception. Only, IDAS-II Ordering showed highest correlation with BAI in normal and combined sample with the correlation values of .45 and .46.

Discriminant correlations of PTSD scales were assessed via PTSD Check List-Civilian Version (PCL-C) in both normal and combined sample. In both samples, IDAS-II Traumatic Avoidance Scale showed highest correlation with PCL-C Avoidance scale than other PCL-C scales. Also correlation between IDAS-II and PCL-C Traumatic Avoidance scales ($r = .44$) was higher than any correlations between IDAS-II Traumatic Avoidance scale and BDI, MDQ, MOCI, PAS and subscales of these scales ($r \leq .38$). This result indicated discriminant validity of Traumatic Avoidance scale. In combined sample IDAS-II Traumatic Intrusions Scale correlated with PCL-C Re-experience ($r = .60$). And as expected, this correlation is higher than correlations between IDAS-II Traumatic Intrusions and other PCL-C scales ($r \leq .57$). This relation was also stronger than any relation between IDAS-II Traumatic Intrusion scale and MDQ, MOCI, PAS and subscales of these scales, in combined sample ($r \leq .43$). However, Traumatic Intrusion scale had slightly higher correlation with BDI in normal and combined sample with the correlation value of .61 and .62, respectively.

Discriminant validity of IDAS-II Panic, Claustrophobia scales and Social Anxiety scales were examined with Beck Anxiety Inventory and Panic Agoraphobia Scale in both normal and combined sample. In both samples, IDAS-II Panic scale revealed higher correlations with Panic Attack subscale of PAS ($r \geq .45$) than with

any other subscales of PAS ($r \leq .35$). In both samples, IDAS-II Claustrophobia showed higher correlation with PAS Agoraphobic Avoidance subscale ($r = .44$) than with other subscale of PAS ($r \leq .42$). IDAS-II Claustrophobia Scale also related with BAI with correlation value of .76 and .71 in normal and combined samples, respectively. IDAS-II Social Anxiety related with BAI with correlation value of .76 and .71 in normal and combined samples, respectively. Interestingly, IDAS-II Panic, Claustrophobia and Social Anxiety scales were correlated with PCL-C total score and BDI in both samples.

In normal sample, the correlation between IDAS-II Mania and MDQ ($r = .45$) is higher than any other correlations between Mania and BDI, BAI, MOCI, PAS and PCL-C and their subscales ($r \leq .41$). The correlation between Euphoria and MDQ ($r = .39$) is higher than any other correlations between Euphoria and BDI, BAI, MOCI, PAS and PCL-C and their subscales ($r \leq .23$). Same pattern also was true for combined sample. Both Mania and Euphoria correlated with MDQ. And these correlations were higher than other correlations with BDI, BAI, MOCI, PAS and PCL-C, indicating discriminant validity of Mania and Euphoria scale.

3.3.4. Concurrent Validity

In addition all IDAS-II scales were able differentiate normal and patient sample significantly. Independent sample t-test revealed that patients had significantly higher scores on Dysphoria, Lassitude, Suicidality, Insomnia, Appetite Loss, Appetite Gain, Ill-Temper, Mania, Panic, Social Anxiety, Claustrophobia, Traumatic Intrusions, Traumatic Avoidance, Checking, Ordering and Cleaning.

Conversely, normal sample had significantly higher scores on Well-being and Euphoria.

Table 3. 19. Descriptive statistics for clinic and non-clinic samples and mean score comparisons with effect sizes.

	Clinic		Non-Clinic		t	df	p	Cohen's d
	M	SD	M	SD				
General Depression	60.66	14.51	41.68	13.44	-17.59	919	0.00	-1.35
Dysphoria	31.54	8.84	19.93	8.02	-17.94	919	0.00	-1.37
Lassitude	19.00	5.26	13.38	5.12	-13.85	919	0.00	-1.08
Insomnia	16.53	5.79	11.84	4.78	-11.84	919	0.00	-0.88
Suicidality	11.08	5.12	7.49	2.85	-13.04	919	0.00	-0.86
Appetite Loss	7.42	3.11	5.90	2.61	-7.09	919	0.00	-0.53
Appetite Gain	6.76	3.36	5.92	2.74	-3.68	919	0.00	-0.27
Well-Being	18.01	6.59	23.02	6.58	9.65	919	0.00	0.76
Ill Temper	13.83	5.67	9.34	4.63	-11.64	919	0.00	-0.86
Mania	10.85	4.43	9.78	3.71	-3.48	919	0.00	-0.25
Euphoria	8.84	3.98	9.91	4.19	3.30	919	0.00	0.26
Panic	20.84	7.94	12.19	5.27	-18.37	919	0.00	-1.28
Social Anxiety	15.28	6.72	9.83	4.60	-13.42	919	0.00	-0.94
Claustrophobia	12.90	5.89	7.94	4.20	-13.60	919	0.00	-0.97
Trauma Intrusions	11.39	4.99	7.65	3.84	-11.52	919	0.00	-0.84
Trauma Avoidance	11.09	3.91	8.59	3.97	-8.00	919	0.00	-0.63
Checking	8.20	3.41	6.17	2.87	-8.58	919	0.00	-0.64
Ordering	12.70	4.74	10.56	4.05	-6.43	919	0.00	-0.48
Cleaning	17.07	8.24	13.17	6.06	-7.49	919	0.00	-0.54

Note: N= 913 (Non-clinic). N= 208 (Clinic). Large and Medium effect sizes are in boldface (i. e., $d \geq .50$)

In order to quantify these group differences, effect sizes were computed by using Cohen's *d*. 13 of 19 comparisons (Dysphoria, Lassitude, Suicidality, Insomnia, Well-being, Ill-Temper, Panic, Social Anxiety, Claustrophobia, Traumatic Intrusions, Traumatic Avoidance, Checking) revealed large effect size. 2 of 19 comparisons (Appetite Loss, Cleaning) revealed moderate effect size whereas 4 of 19 (Appetite Gain, Mania, Euphoria and Ordering) comparisons revealed small effect sizes. Descriptive statistics for clinic and non-clinic samples and mean score comparisons with effect sizes were presented in Table 3.19.

CHAPTER IV

DISCUSSION

4.1. General Discussion

Inventory of Depression and Anxiety Symptoms-II was developed to assess specific symptoms of major depression, anxiety disorders and bipolar disorder (Watson et al., 2012). Watson et al. (2012) established that expanded version of Inventory of Depression and Anxiety Symptoms (IDAS-II) is a reliable and valid tool to screen depression and anxiety as well as bipolar symptoms and to assess severity of symptoms in both patient and normal samples. The purpose of the present study was to provide an inventory that assesses depression and anxiety symptoms jointly as well as bipolar symptoms in Turkish culture. Therefore, factor structure, reliability and validity of IDAS-II were examined in Turkish culture. Secondly, we examined whether demographic variables have an effect on IDAS-II scales. In this chapter results of the current study were discussed. Also, in addition to implications and limitations of the current study and also suggestions for further research were presented in this chapter.

Analyses were carried out with normal ($N= 713$) and combined sample ($N= 921$), separately. In terms of reliability, Cronbach Alpha values of 99 items were .96

in both samples. Cronbach alpha values of splitted halves were over .92 and correlation between two parts was .83 in both samples. Majority of IDAS-II scales revealed Cronbach Alpha values above .80. Also majority of the average interitem correlations were moderate in range, as expected. Only suicidality scale yielded relatively low Cronbach Alpha value (.44). One possible explanation for this result can be problems due to translation. Eventhough we carried out translation procedure of IDAS-II meticulously; in general, reliability and validity studies in different languages are more prone to errors due to translation. This lower level of Cronbach Alpha value for Suicidality can be explained by cultural differences. Further studies are needed to understand the possible reasons behind this result. Overall, these results mentioned that in general, IDAS-II items and subscales revealed high internal consistency. Eventhough IDAS-II scales were found to be reliable in general, Suicidality scale should be considered cautiously.

Test-retest reliability of IDAS was examined with 100 participants from normal sample with 4 week interval. In general, majority of the retest correlations of 99 items were found to be significant but correlation coefficients were relatively low in general. In scale level, 16 of the 18 correlations were significant. Insomnia and Ordering revealed highest retest correlation with the correlation value of .56. IDAS-II aims to assess symptoms on 'last two weeks including today'. Therefore IDAS-II can be considered as state measure of depression rather than a trait measure. In state measure of depression, test-retest correlations of depressive symptoms decrease as the interval time increases, because there is no enduring vulnerability for depressive symptoms that contributes to stability over time (Abela & Hankin, 2008). By its nature, retest correlations expected to be lower in state measures compared to trait

counterparts (Nezu, Ronan, Meadows, & McClure, 2000). Therefore it seemed that IDAS-II is sensitive to changes in depression and anxiety symptoms over time while revealing good level of consistency over time.

Turkish form of IDAS-II revealed factor structure that was quite similar to original form. Turkish form of IDAS-II also consisted of three factors and eighteen subscales. The first factor 'Distress' was marked by Dysphoria, Lassitude, Ill-Temper, Panic, Traumatic Intrusions, Insomnia, Appetite Loss, Mania, Suicidality, Traumatic Avoidance, Appetite Gain and Social Anxiety. The second factor 'Obsessions and Fear' was defined by three OCD scales Ordering, Checking and Cleaning and Claustrophobia. The third factor 'Positive Mood' was marked by Euphoria and Well-being.

Different from the original study, all Social Anxiety items loaded on the first factor in current study, whereas Social Anxiety scale was loaded on the second factor in the original study (Watson et al, 2012). It is important to mention that in the original study Social Anxiety loaded on both the first (.40) and the second factor (.41), (Watson, et al., 2012). In literature, theoretically social anxiety and depression are viewed as different constructs (Gibb, Coles, & Heimberg, 2005; Krueger, 1999; Watson, 2005; Watson & Clark, 2006), however comorbidity rates between social anxiety and depression is remarkable (Belzer & Schneier, 2004; Brunello et al, 2000). For instance, social anxiety revealed second highest comorbidity rate with depression among anxiety disorders (Kessler, Chiu, Demler, Merikangas, & Walters, 2005). In addition there is evidence that especially social anxiety among anxiety disorders related to anhedonia that characterize depression (Brown et al., 1998;

Watson, Clark & Carey, 1988). It seemed that the relationships between social anxiety and depression are complicated. In the current study, Social Anxiety scale loaded on the general 'Distress' that is predominantly marked by symptoms of depression and anxiety.

Four items of Mania (IDAS 63, 77, 83 and 87), one Appetite Loss (IDAS 1) and one Traumatic Avoidance (IDAS 73) item had loaded on both first and second factor but since it is meaningful for them to load on the first factor, they were retained in the first factor. Also one Mania item only loaded on third factor however it was meaningful for this item to load on the first factor so this item was included in first factor. Eventhough Mania items raised concerns; we examined the reliability and validity of the scale. Mania scale revealed good internal consistency with AIC value of .30 and alpha value of .67. Mania also revealed significant convergent correlation with Mood Disorder Questionnaire, $p < .001$. And this correlation value was higher than correlations between Mania scale and BDI, BAI, MOCI, PAS and indicated discriminant validity of Mania scale. Mania scale was able to differentiate patients and normal participants however effect size was relatively small.

Dysphoria scale contained 10 items that captures symptoms of depression. However, Watson and his colleagues (2007) created 20-item General Depression scale that is more similar to traditional measures of depression like BDI. General Depression scale shared items with other IDAS-II scales; it consisted of all Dysphoria items and two items from each of Suicidality, Lassitude, Insomnia, Appetite Loss and Well-being (reverse keyed). These two broad scales revealed strongest associations with indicators of psychopathology. As expected these two

scales revealed highest correlations with BDI and BAI in both normal and combined samples. General Depression and Dysphoria also revealed highest internal consistencies in both normal and combined sample with the alpha values ranged between .88 and .91. These two scales also revealed strongest differentiation among patients and healthy controls. Since these scales revealed strongest correlations with traditional measures of depression they can be used as a reliable and valid measure of depression.

Dysphoria, Lassitude, Appetite Loss and Wellbeing revealed strong correlations with BDI and BAI. They are moderately interrelated with majority of the correlation ranged between .20 and .50. They were all well-differentiated normal and patient sample. These scales also revealed good convergent and discriminant correlations. In contrast, Appetite Gain yielded weaker relations with both BDI and BAI in both samples. It was able to differentiate patient and normal sample but the effect size of the difference is relatively low with the Cohen's *d* value of $|.27|$. Also in the original study, Appetite Gain revealed smaller correlations with BDI and BAI and it also failed to differentiate normal and patient sample (Watson et al., 2007). Earlier research with BDI indicated that appetite/weight gain symptoms are not specific symptoms of depression even they are more pervasive in general population. Therefore items related to increased appetite excluded from original BDI with the reason that they are pervasive in general population and therefore they may lead to 'false positives' (Beck & Steer 1993). However, Watson and his colleagues (2012) proposed that Appetite Gain may be useful tool to assess atypical forms of depression (Joiner et al., 2005) which is characterized by appetite/weight gain (American Psychiatric Association, 1994).

OCD scales were moderately correlated with each other in general with the only exception. Whereas Checking and Ordering revealed high correlations in original study (Watson et al, 2012), in the current study only the correlation between Cleaning and Ordering revealed relatively high correlation among OCD symptoms. OCD scales revealed high internal consistencies with the alpha values ranging from .75 to .78 in both normal and combined samples. OCD scales revealed good level of convergent correlations with MOCI. However it is important to note that MOCI does not have a subscale for Ordering. Turkish MOCI includes 7 item Rumination scale (Erol & Savaşır, 1988) and Ordering showed higher correlations with Rumination subscale of MOCI compared to other subscales of MOCI. Overall, IDAS OCD scales revealed significant convergent and discriminant validity both in relation to MOCI and other measures of the study.

Traumatic Intrusion scale revealed high internal consistency with the alpha values of .85 and .84 in normal and combined sample, respectively. It revealed slightly higher convergent correlations with PCL-C Avoidance and PCL-C Hyperarousal scales than Re-experience in normal sample. However, it revealed higher correlation with PCL-C Re-experience scale than other PCL-C subscales in combined sample. The correlations of Traumatic Intrusion scale with BDI and BAI was higher in combined sample compared to normal sample. One possible explanation for this result can be that high comorbidity rate was observed between PTSD depression and anxiety disorders (Campbell et al., 2007; Kaplan & Sadock, 2007). Both Traumatic Intrusion and Avoidance scales were also able to differentiate patient and normal sample as expected.

Also IDAS Social Anxiety, Panic and Claustrophobia scales revealed high internal consistencies with alpha values ranging from .83 to .85. These scales also established convergent and discriminant correlations in relation to BAI and PAS. However it is also noteworthy to indicate that these scales were also correlated PCL-C total score and BDI. One explanation can be that high comorbidity rates were found between mood and anxiety disorders with PTSD (Westermeyer & Canive, 2012; Brady & Clary, 2003; Brown, Campbell, Lehman, Grisham, & Mancill, 2001). And Traumatic Avoidance scale well-differentiated patients from normal sample.

IDAS-II Euphoria scale revealed high internal consistency with the alpha values of .81 and .82 in both normal and combined sample. Euphoria scale revealed positive correlations with both Mania and Well-being in both samples whereas the correlation between Mania and Well-being is low. Same pattern was observed by Watson and his colleagues (Watson, 2012). And they (2012) proposed that Euphoria may assess heightened mood which characterize manic episodes (American Psychiatric Association, 2000; Gruber, Mauss, & Tamir, 2011) and reflects pathologic way of positive affect. Our results seemed to support this relationship. Euphoria scale was able to differentiate patient sample from normal sample, but the effect size was relatively small as Mania.

We compared clinic and normal samples on IDAS-II scales in order to reveal whether IDAS-II scales are able to differentiate patients from healthy controls. Independent sample t-test revealed that all IDAS-II scales were able differentiate normal and patient sample significantly. Patients had significantly higher scores on Dysphoria, Lassitude, Suicidality, Insomnia, Appetite Loss, Appetite Gain, Ill-

Temper, Mania, Panic, Social Anxiety, Claustrophobia, Traumatic Intrusions, Traumatic Avoidance, Checking, Ordering and Cleaning. Conversely, normal sample had significantly higher scores on Well-being and Euphoria. In order to quantify these group differences, effect sizes were computed by using Cohen's *d*. In 13 of 19 comparisons (Dysphoria, Lassitude, Suicidality, Insomnia, Well-being, Ill-Temper, Panic, Social Anxiety, Claustrophobia, Traumatic Intrusions, Traumatic Avoidance, Checking) effect sizes were large. 2 of 19 comparisons (Appetite Loss, Cleaning) revealed moderate effect size whereas 4 of 19 (Appetite Gain, Mania, Euphoria and Ordering) comparisons revealed small effect sizes. However, Effect size for Ordering was close to moderate with the *d* value of .48. As we mentioned before Appetite Gain revealed relatively small correlations with BDI and BAI. For this reason it was evaluated to be less related to psychopathology; therefore it is not surprising that it revealed small effect sizes in patient and healthy control comparisons. Also, as we indicated before Euphoria was found to be related with Well-being scale which is expected to yield higher scores in normal sample. This pattern may be the one possible reason why Euphoria revealed small effect size in this comparison. As we mentioned before, eventhough Mania scale reveled good convergent and discriminant validity, the alpha value for Mania scale was found to be just in acceptable range (.67) and its items loaded of more than one factor. Therefore Mania scale must be evaluated cautiously.

Finally, we examined the effect of demographic information on IDAS-II Scales. In order to reveal the effect of gender, marital status, work status, education and perceived level of income; separate one-way analysis of variance was carried out on IDAS-II scales, in normal sample. One-way ANOVA revealed that gender have

an effect on eight of the IDAS scales. Females revealed higher scores on Dysphoria, Lassitude, Apatite Gain, Claustrophobia, Traumatic Intrusions, Traumatic Avoidance, Ordering and Checking. It seemed that women presented higher levels on symptoms of depression and anxiety. This result is in accordance with bulk of evidence in literature. Gender difference in depression is one of the clearest findings in psychiatric epidemiology (World Health Organization, 2006). General population studies revealed that women dominated men in lifetime prevalence in depression (Piccinelli & Homen, 1997). This result is valid across clinic, non-clinic samples and different racial groups (Kessler et al., 1994; Gater et al., 1998). Community studies indicated life time occurrence rate of anxiety disorder is 31% for females whereas this rate is 19% for males. It seemed that gender increases the probability of anxiety disorder in women compared to men (Ginsberg, 2004). Epidemiological studies also revealed that lifetime prevalence rates range from 10 to 12 percent among women whereas this rate changes from 5 to 6 percent among men (Kaplan & Sadock, 2007). Also, Agoraphobia has lifetime prevalence rate of 7% in women whereas this rate is 3.5% in men (Ginsberg, 2004). In addition lifetime prevalence rate for OCD is 5.4% for females and 1.7% for males (Angst et al., 2004).

One-way ANOVA revealed that marital status have an effect on Dysphoria, Lassitude, Appetite Gain, Ill-Temper, Mania, Euphoria, Panic, Claustrophobia, Traumatic Intrusions and Social Anxiety. In accordance with our result, Kessler and Essex (1982) reported that married individuals have lower level of depression compared to non-married individual. Scott et al. (2010) indicated that marriage is related to reduced risk of onset in mental disorders including mood, anxiety and

substance used disorders. Divorced, separated, widowed or never-married individuals presented higher level of depression than married individuals (Durden, 2006).

One-way ANOVA showed that individuals who perceive their level of income as very high, high or above middle revealed higher levels of Well-being. One-way ANOVA indicated that education level is only related to Ordering, Cleaning, Insomnia and Apatite Gain in the current study. As the level of education increases, lower level of Ordering, Cleaning, Insomnia and Apatite Gain symptom was observed. One-way ANOVA also revealed that work status is related to mood and anxiety disorders. Individuals who have a job revealed lower levels of Dysphoria, Lassitude, Ill-Temper, Mania, Panic, Claustrophobia, Traumatic Intrusions, Traumatic Avoidance, Checking, Cleaning, Social Anxiety and Insomnia. In accordance with our results, low socio-economic status (SES) is generally related to psychiatric disorders. World Health Organization (2000) reported that mood and anxiety disorders were positively related to a number of socioeconomic measures including low income, level of education, being unemployed and unmarried. In addition, education reveals positive correlations with mental health and even every year in education reduce scores on mental health disorders (Sironi, 2012). In addition low level of SES increases the likelihood of having psychiatric disorder (Dohwenrend, 1990). In relation to socioeconomic status, unemployment found to be significant indicator of mental illness (Kammerling & O'Conner, 1993). Also unemployed workers were found to be at risk twice times more than employed workers in experiencing psychological problems including depression, anxiety, psychosomatic symptoms, low level of well-being and poor self-esteem.

4.2. Summary and Clinical Implications

IDAS-II was developed to assess depressive, anxiety symptoms as well as symptoms of bipolar disorder with a single measure (Watson et al., 2012). As a summary, IDAS-II turned out to be reliable and valid measure that assesses depressive, anxiety symptoms as well as symptoms bipolar disorder all together in Turkish culture. Factor analyses revealed several interpretable scales that capture different symptom dimensions of targeted disorder. It revealed significant retest correlations in general and established sensitivity due to change over time. IDAS-II also established good convergent and discriminant validity in relation to BDI-II, BAI, MDQ, MOCI, PAS and PCL-C.

IDAS-II showed strong relations with traditional measures of depression and anxiety such as BDI and BAI in Turkish culture. Watson and his colleagues (2012) emphasized three aspects of IDAS-II in comparison with existing measures. Firstly, IDAS-II also provides detailed assessment with distinctive scales such as insomnia, suicidality and appetite loss. Secondly, IDAS-II assesses broader content including OCD, Social Anxiety, PTSD and Mania that were not captured by existing measures. Thirdly, eventhough IDAS-II has 99 items; it doesn't take more time to complete than BDI-II that includes 90 statements over 21 items (Watson et al., 2012). In summary, IDAS-II turned out to be quick and effective tool to assess depression, anxiety and bipolar disorder in Turkish culture.

4.3. Limitations and Future Directions

In factor analysis, the issue of minimum ratio between number of participant and number of item in factor analysis is complicated. Gorsuch (1983) and Hatcher (1994) recommended ratio of 5:1 for subject to item ratio but they also implied that higher ratios reveal better results. On the other hand, Nunnally (1978) recommended that ratio to be at least 10:1. It seemed that there is no consensus on ideal ratio, since number of items per factor, magnitudes of item loading differ and may work differently in every scale (MacCallum, Widaman, Preacher, & Hong, 2001). In the current study we assessed 713 non-clinic participants and 208 outpatients. When we evaluate our sample sizes according to recommended participant to item ratio, we see that we have more than 5 participants but less than 10 participants for each item. However, IDAS-II composed of 99 items and 18 subscales. In addition, IDAS-II is a measure of symptoms of anxiety and mood disorders that are highly correlated constructs. Therefore eventhough we assessed total number of 921 participants which is good enough, it may be better to enlarge sample size when characteristics of IDAS-II taken into account.

In addition our sample predominantly consisted of college students and middle age individuals. Therefore it will be important to replicate there results with other populations such as older adults and younger adolescents. Also our patient sample consisted of outpatients, it is important to replicate these results with inpatients.

Majority of IDAS-II scales revealed significant retest correlations over four week interval. However correlation coefficients were relatively small. As we mentioned before since IDAS-II assess symptoms in the past two weeks, four weeks interval may have played a role in revealing lower level of correlation coefficients. Also we have not examined retest reliability of IDAS-II scales in patient sample with shorter intervals. Therefore further studies should examine retest reliability in both normal and patient sample with shorter periods. Also longitudinal studies may provide information about how scores changes in response to treatment in patient sample.

Secondarily to reliability and validity analysis of IDAS-II, we established basics of the effects of demographic variables including, gender, marital status, level of education, work status and perceived level of income on IDAS-II scales. Further studies should examine these relations in a more detailed way so that they can provide valuable information in terms of epidemiological studies for depression and anxiety.

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