BIS and Its Relation to Psychological Distress: An Explanation of Balanced Time Perspective

by

Canan Sütemen

A Dissertation Submitted to the
Graduate School of Social Sciences and Humanities
in Partial Fulfillment of the Requirements for
the Degree of

Master of Arts

in

Clinical Psychology

July 12th , 2023

BIS and Its Relation to Psychological Distress: An Explanation of Balanced Time Perspective

Koç University

Graduate School of Social Sciences and Humanities

This is to certify that I have examined this copy of a master's thesis by

Canan Sütemen

and have found that it is complete and satisfactory in all respects,
and that any and all revisions required by the final
examining committee have been made.

Committee Members:

_____

Assoc. Prof. Ayşe Altan Atalay (Advisor)

_____

Prof. Mehmet Eskin

_____

Assist. Prof. Yasemin Sohtorik İlkmen

Date: 12.07.2023

To my dear nephew, Deniz

ABSTRACT

BIS and Its Relation to Psychological Distress: An Explanation of Balanced Time Perspective

Canan Sütemen

Master of Arts in Clinical Psychology

July 12, 2023

Behavioural Inhibition System (BIS) is an emotion system that regulates one's reactiveness to cues of punishment, non-reward, and novelty. Although BIS and its association to anxiety and depression is known in literature, BIS is not enough to explain their occurrence by itself. The current study used Zimbardo's Time Perspective (TP) Theory which has been shown to be significantly associated with BIS before, to explain this pathway. Zimbardo's TP explains how people classify their experiences into different time contexts as past, present, and future, giving them unity and meaning. Balanced Time Perspective (BTP) is a construct that proposes that the optimum way of using these time perspectives adaptively according to situational demands. Deviation from a Balanced Time Perspective (DBTP) is associated with various detrimental psychological outcomes. Current study aimed to explain the role of DBTP in the relationship between BIS and depression and anxiety. To further understand the association between BIS and DBTP, attachment anxiety and attachment avoidance was investigated as moderators. A sample of 378 (Female 74.3%, M= 33.18, SD = 12.16) participants participated in the study. The participants were presented with measures of BIS scale of BIS/BAS scales, Experiences in Close Relationships-Revised, Zimbardo's Time Perspective Inventory, Generalized Anxiety Disorder-7, and Patient Health Questionnaire-9. The results indicated support for the significant mediator role of DBTP between BIS and depression/anxiety. Although the moderator role of attachment anxiety and avoidance between BIS and DBTP was not supported, we found evidence for additive effect of both BIS and attachment anxiety on DBTP.

Keywords: BIS, psychological distress, attachment anxiety, attachment avoidance, time perspective.

ÖZETÇE

DİS ve Psikolojik Sıkıntıyla İlişkisi: Dengeli Zaman Perspektifi Açıklaması

Canan Sütemen

Klinik Psikoloji Yüksek Lisansı

12 Temmuz, 2023

Davranışsal İnhibisyon Sistemi (DİS), kişinin ceza, ödülsüzlük ve yenilik ipuçlarına tepkisini düzenleyen bir duygu sistemidir. DİS ve anksiyete ve depresyon ile ilişkisi literatürde bilinmesine rağmen, tek başına oluşumunu açıklamaya yeterli değildir. Mevcut çalışma, bu yolu açıklamak için daha önce DİS ile önemli ölçüde ilişkili olduğu gösterilen Zimbardo'nun Zaman Perspektifi (ZP) Teorisini kullanmıştır. Zimbardo'nun ZP'si, insanların deneyimlerini geçmiş, şimdi ve gelecek gibi farklı zaman bağlamlarında nasıl sınıflandırdıklarını açıklar ve ZP'nin deneyimlere birlik ve anlam verdiğini söyler. Dengeli Zaman Perspektifi (DZP), bu zaman perspektiflerini durumsal taleplere göre uyarlamalı olarak kullanmanın optimum yolunu öneren bir yapıdır. Dengeli Zaman Perspektifinden Sapma (DZSP), çeşitli zararlı psikolojik sonuçlarla ilişkilidir. Mevcut çalışma, DZSP'nin DİS ve depresyon ve DİS ve anksiyete ilişkisindeki rolünü açıklamayı amaçlamıştır. DİS ve DZSP arasındaki ilişkiyi daha iyi anlamak için ek olarak moderatör kaygılı bağlanma ve kaçınmacı bağlanma araştırılmıştır. Araştırmaya 378 (Kadın 74.3%, Ort= 33.18, SS = 12.16) katılımcı katılmıştır. Katılımcılar sırasıyla Davranışsal İnhibisyon Sistemi Ölçeği, Yakın İlişkilerde Yaşantılar Envanteri-II, Zimbardo'nun Zaman Perspektifi Envanteri, Genel Anksiyete Bozukluğu-7 ve Hasta Sağlığı Anketi-9 çözmüşlerdir. DZPS'nin DİS ile depresyon/anksiyete arasındaki aracı rolü desteklenmiştir. Kaygılı bağlanma ve kaçınmacı bağlanmanın DİS ile DZSP arasındaki moderatör rolü desteklenmese de hem DİS'in hem de bağlanma kaygısının DZSP üzerinde aditif bir etkisi olduğuna dair kanıt bulunmuştur.

Anahtar Sözcükler: DİS, psikolojik sıkıntı, kaygılı bağlanma, kaçınmacı bağlanma, zaman perspektifi

ACKNOWLEDGEMENTS

I would like to express my gratitude and appreciation for my dear nephew, Deniz, as his birth was one of the most joyful things to happen to me so far in my life. I held him close to me since his birth and he has been a little bundle of sunshine. He is as old as this thesis, and whenever I needed motivation, he was there for me with his big smile.

Most importantly, I would like to thank my thesis advisor Ayşe Hocam as she did not give up on me and was a sound of reason when I needed it to be. She dutifully helped me every step of the way with her knowledge and experience. She is smart, courageous but most importantly, a good person to look up to.

I give my special thanks to my best friend Eslem, she always been the one to teach me appreciate who I am, accepting me without an objection. I also especially thank Laçin, my dear friend for being there for me through this process called dissertation.

My dear sister Zeynep and her husband İlker, thank you for being a second home to me.

Finally, I would like to thank TÜBİTAK 2210-A scholarship program for their financial support. Their contribution helped me to focus on my studies without worrying about my financial situation.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

DBTP	Deviation from Balanced Time Perspective
BIS	Behavioural Inhibition System
ZTPI	Zimbardo's Time Perspective Inventory
BI	Behavioural Inhibition
PN	Past Negative
PP	Past Positive
PF	Present Fatalistic
PH	Present Hedonistic
F	Future
FN	Future Negative

Chapter 1:
INTRODUCTION

Psychological disorders have a major impact on several aspects of the modern world including issues related to economy, health, and social rights (World Health Organization [WHO], 2019). Approximately 322 million and 264 million people are said to be living with depression and anxiety, respectively (WHO, 2017). Furthermore, it has been long known that comorbidity is a prevalent issue in mental disorder diagnoses, with anxiety and depression co-occuring together (Sartorius et al., 1996; Kaufman& Charney, 2000; Vaidyanathan et al., 2011). The question of whether these mental disorders share a common etiology is raised due to high comorbidity rates of mental disorders (Formane-Hoffman et al., 2018). Thus, the current study is mainly interested in investigating role of certain transdiagnostic risk factors in the etiology of depression and anxiety.

1.1 Vulnerability for Psychopathology

Many of the models that aim to explain the antecedents of psychological disorders highlight the crucial roles of two factors in the development of a mental disorder: a vulnerability stemming from either biological makeup or specific incidents of initial ten years of one's life or both, and a catalyst that causes this vulnerability to come to fruition in terms of dysfunctional traits (Kagan 2022; Ingram & Price, 2010). One of the traits that can be categorized as a source of biological vulnerability is the "*inherited temperamental bias*" (Kagan, 2022), which refers to a biological vulnerability that results in certain forms of emotions and behaviors manifested in early childhood (Kagan,2010). In a similar vein, Gray (1991b, p. 106) explains the term "temperament" as how much people differ on the type of emotions they are inclined to show, and these emotions are the outcomes of workings of one's nervous system regarding triggers of the environment. Behavioral Inhibition (BI) is a construct studied in relation to temperament by two different perspectives from both Kagan and Gray (Morgan, 2006).

1.2 Perspectives on Behavioral Inhibition (BI)

Kagan (2022) identifies high reactivity and low reactivity in infancy as two temperamental characteristics that can affect infants' behavior in later years in terms of behavioral inhibition. According to Kagan and Snidman (1999), children can be placed on a continuum based on their reactivity to unfamiliar event. The two opposite ends of this continuum are "behavioral inhibition" and "behavioral disinhibition". Those who have inherited a temperamental characteristic that render their amygdala threshold lower as infants (high reactivity) are more susceptible to become behaviorally inhibited as children, in which they would react to unfamiliar situations with distress. On the other hand, those who have inherited a higher amygdala threshold (low reactivity) would have a tendency to be at the other end of the spectrum as children and would not have the same problem. Overall, differing in their reactions to foreign places and incidences, children who withdraw, resist, display distress and generally inhibit their current behavior in the face of "unfamiliar" were said to be behaviorally inhibited (Coll et al., 1984; Kagan et al., 1984). Behavioral inhibition (BI) has been linked to psychological distress experienced in both childhood and adulthood in various studies. For example, Brozina and Abela (2006) showed that in children from grades 3 to 6, higher behavioral inhibition (BI) was linked to future higher anxious symptoms six weeks later, especially when they were subject to high stress events. In line with this, in their meta-analysis of prospective studies examining the relationship between behavioral inhibition and future anxiety, Sandstrom and colleagues (2020) have found that BI in early years were a risk factor for subsequent social anxiety disorder, generalized anxiety disorder and specific phobias in later childhood. Overall, research on this dimension indicates BI is linked to later mental health outcomes.

There is also empirical evidence coming from both retrospective and prospective studies for the significant association between BI in childhood and internalizing symptoms in adulthood. For example, studying adult depressed patients, Gladstone et al. (2005) have found that participants who (retrospectively) reported high BI during childhood were more likely to experience non melancholic depression and elevated levels of social anxiety. Another study using a similar methodology found a link between BI and comorbid depression and avoidant personality disorder in a sample of

adults diagnosed with social phobia (Rotge et al., 2011). Retrospective individual declarations of behavioral inhibition in childhood have been also linked to social anxiety, depression and anxious arousal in non-clinical young adult population, social anxiety having the strongest relationship of all (Schofield et al., 2009). Connecting behavioral inhibition in childhood and outcomes in adulthood 25 years later, Tang and colleagues (2020) found in their longitudinal study that being behaviorally inhibited as 14 months old toddlers was linked to internalizing symptoms such as anxiety and depression at 26 years old, while this effect did not hold for externalizing symptoms. All in all, it seems that childhood BI is related to adult outcomes in adulthood, making someone more likely to have internalizing symptoms at a later age.

Another conceptually similar construct in relation to Behavioral Inhibition has also been studied in adults, which comes from Gray's Reinforcement Sensitivity Theory. Behavioral Inhibition System (BIS) and Behavioral Activation System (BAS) are theorized to be the regulatory systems of human behavior based on different neurological components, which indicates reactiveness to cues of punishment and reward/non-punishment, respectively (Gray, 1994). Found to have moderate inheritability (Takahashi, 2007), both BIS and BAS are assumed to be independent systems with individuals showing individual differences on both continuums (Carver & White, 1994). Studies indicate BIS and BAS to be associated with different life outcomes (Bijttebier et al., 2009). More specifically, a review done by Katz and his colleagues (2020) reported higher BIS to be linked to higher depression and anxiety levels, while lower BAS is said to be linked to higher depression levels in literature. Using a part of NESDA ("Netherlands Study of Depression and Anxiety") study data, Struijs and colleagues (2018) investigated both BIS and BAS in relation to both anxiety and depression in a large adult population through a longitudinal design. In their 2-year follow ups of the population, they had found that those who did not have a diagnosis at first were more likely to have anxiety at follow up when they had higher BIS. Moreover, higher BIS was also related to having more chronic anxiety at follow up. These patterns of relationships were not as strong for connections between BIS and depression. On the other hand, these effects did not hold up at all for BAS since it had no significant relation to depression and anxiety. In conclusion, NESDA research in

general has found BIS as a risk factor for developing depression and anxiety (Struijs et al., 2021).

BIS is activated when the individual is exposed to either a novel stimulus or a stimulus that signals the emergence of non-reward/punishment. This activation in turn leads to inhibition of the current behavior in addition to increased attention and arousal to anxiety provoking stimuli. While BAS is primarily activated in response to rewards/non punishment, it activates behaviors that initiate approach to getting close to stimuli, which in turn results in goal-directed behavior (Gray, 1994). Activation of BIS results in the termination of the behavior in progress, making the body more aroused so that proceeding action is completed in a more rapid manner and further allocation of attentional resources by which information related to environmental stimuli is processed in higher rates (Gray,1991b). BIS sensitivity has also been linked to "unpleasant information processing" in which one would complete ambiguous word fragments in a negative manner, accurately recognize negative words and accurately remember negative words from a list (Gomez& Gomez, 2002). Gray (1990) bases the Behavioral Inhibition System to emotion of anxiety, gathering evidence from anti-anxiety drugs known to reduce anxiety in both animals and humans. These drugs that reduce anxiety, also reduce behaviors such as inhibition, arousal of the body and subsequent higher attentional intake, making it compatible with BIS.

Although previous studies indicate the presence of a strong and consistent relationship between BIS and psychological distress, it is argued that BIS alone falls short of illustrating the occurrence of anxiety and depression, and different mechanisms leading BIS to depression and anxiety should be studied (Takashi et al., 2015). Thus, several studies have examined different mediators to better understand this relationship. Emotion regulation difficulties (Markarian et al., 2013) and maladaptive emotion regulation strategies (Izadpanah et al., 2016) have been found to be mediators between BIS and anxiety. Furthermore, studying a female population with substance use disorder, Xie and colleagues (2021) have found that intolerance of uncertainty mediated the relationship with BIS and depression, with the possibility that higher BIS linked to higher intolerance of certainty which eventually ended up in depressive symptoms. As can be seen from the literature; various variables are increasingly investigated to fill the gap between BIS and psychological distress. Our study proposes that Zimbardo's

concept of Time Perspective could also help explain the mechanism between BIS and psychological distress.

1.3 Time Perspective Theory and Mental Health

Time Perspective (TP), which includes both repetetive and unique experiences, is said to be a regulatory unconscious process where individuals organize their experiences in their relative temporal contexts, giving one's experiences sense and unity (Hall, 1983 as cited in Zimbardo & Boyd, 1999). Zimbardo's Time Perspective Theory bases its main tenet on the assumption that TP, how we understand and categorize life events to different temporal dimensions, plays an essential role in people's lives by which their decisions and behaviors are continously affected. For past, present and future time zones; TPs assume respective roles: processing and remembering past events, a representation of current experiences and anticipation of future events (Zimbardo &Boyd, 1999).

Zimbardo's Time Perspective Inventory (ZTPI), which is a subjective measurement developed in line with Zimbardo's Time Perspective Theory, divides these temporal perspectives into five different dimensions as Past Positive, Past Negative, Present Fatalistic, Present Hedonistic and Future (Zimbardo & Boyd, 1999). ZTPI (Zimbardo & Boyd, 1999) assesses attitudes towards one's past based on two dimensions: Past Negative (PN) and Past Positive (PP). PN involves negatives attitudes towards one's past either based on real negative experiences (e.g. trauma) and/or harmless experiences that have been relabeled as negative. On the other hand, PP entails positive attitudes towards one past, in which old days are remembered well. Moreover, views regarding one's present is estimated with Present Hedonistic (PH) and Present Fatalistic (PF) dimensions. PH indicates a pleasure-seeking and self-indulgent attitude on the present time experiences. PF reflect a fatalistic view by which one's present is contingent upon fate and that the individual has no control over the life events. Finally, Future (F) demonstrates an approach aiming for future, staying away from present impulses with the intention of establishing future goals and getting prizes. Based on Zimbardo and Boyd (1999)'s emphasis on the questionable nature of F dimension being only one factor, a sixth dimension was added as "Future Negative" (FN) later on,

to account for the inclination to see one's future as more negative due to a focus on possible threats and failures (Carelli et al., 2011).

ZTPI and its relation to depression and anxiety has been studided in both non-clinical and clinical populations. To start with, original ZTPI study indicated positive correlations between various dimensions of TP and depression and trait anxiety. PN and PF had positive correlations while F and PP had negative ones. On the other hand, PH was only related to depression (Zimbardo & Boyd, 1999). Greek adaptation ZTPI also found the similar correlations with the exception of F and PH (Anagnostopoulos & Griva, 2012). From a similar vein, trait anxiety and depression yielded the most robust associations with PN and PF in non-clinical adult population from Poland (Tseferidi et al., 2017). PN and PF has also been found to associated with depressive symptoms in older adults (Desmyter & Raedt, 2012). There have been also studies regards to comparing clinical patient groups and controls in regard to time perspectives. Oyadanel and Buela-Casal (2014) have found that depressed individuals endorsed more PN, more PF and less PP compared to non-depressed people. Studying Greek army recruits, Papastamatelou and her colleagues (2015) found that those without GAD diagnosis had endorsed more future orientation compared to diagnosed recruits. Examining the difference between depressed and non-depressed patients, Kaya-Lefevre et al. (2019) have found that depressed patients had endorsed PN and PF time perspective more, while non-depressed patients endorsed more PH perspective compared to the other group. Moreover, within depressed patients, trait anxiety and depression scores were related to PF and PN time perspectives. Wang and his colleagues (2021) found that depressed patients also adopted PF and PN time perspective more frequently, while healthy controls were greater in their scores of PP and future dimensions. Altan-Atalay and colleagues (2020) found in their path analysis that depressive symptoms were linked to all dimensions of original ZTPI, only PF and PN having positive associations while the rest had negative ones. On the other hand, the same pattern of results were replicated for anxiety except for F and PH dimensions, which were found to be nonsignificant. Based on these studies mentioned, viewing one's past negatively and believing in no free will in regards to present seems to be related to depression and anxiety, while future and past positive time perspectives' roles are debatable.

TPs influence one's behaviors, and overuse of one time perspective over the others makes individuals to become overly reliant on certain TPs in a maladaptive

manner (Zimbardo & Boyd, 1999). Upon further examination, Zimbardo et al. (2012) argues that certain patterns emerge as to how dominance of certain time perspectives affect the way people live. More specifically, those who rely on future perspective are better at planning for future events such as doctor appointments, taking care of their health and more likely to be accomplished in work and academic life, while they may be less likely to help others in need.On the other hand, people with present orientation have an inclination to participate in dangerous behaviors (such as “risky sexual behavior”, drugs, alcohol, gambling etc.) without taking care of themselves like future oriented people do. However, they are more likely to aid people in need compared to those who have future orientation. Finally, people with past orientations who view the past as negative are in the shelf of their pain without the ability of helping others. Moreover, those who view past as positive, are inclined to be friendly, family oriented and assist acquaintances but not outsiders (Zimbardo et al., 2012).

To address the issue of overreliance of certain TPs, Zimbardo and Boyd (1999) introduced the term Balanced Time Perspective (BTP) to describe the optimum way of using these time perspectives interchangbly in interaction with one's circumstances. In what they call an “optimum state”, people have the emotional freedom to change their thoughts between different time frames (Zimbardo, 2012). According to Boniwell and Zimbardo (2015), circumstances of the environment dictate a person with BTP to utilize their relevant mode of time perspective in an efficient manner. In other words, depending on the environment and situation they are in, a person is able to switch back and forth between relevant time perspectives to get the most from the experience. For example, a work activity may be done in a F time perspective dominance to be productive but further along the activity PH may come to effectively increase their enjoyment while doing the work. The same person also may enjoy the present moment while spending time in a holiday, without struggling with the impending job responsibilities. In line with this conceptualization, having a BTP has been found to be positively related to subjective well-being (Boniwell et al.,2010; Zhang et al.,2013; Drake et al., 2008; Griffin & Wildbur, 2020), mindfulness (Drake et al.,2008; Stolarski, 2016), and resilience to developing psychological distress (Griffin & Wildbur, 2020).

More recently, Stolarski et al. (2011) developed a formula by which they would measure how much one deviates from a optimal profile of TP which they called Deviation from Balanced Time Perspective (DBTP). Having the tendency to deviate

from a balanced time perspective has been associated with materialistic attitudes (Watson, 2019), hypocortisolism that could be indicative of chronic stress (Olivera-Figueroa et al., 2015) and vulnerable narcissism (Zajenkowski et al., 2016). DBTP also has been negatively associated with positive mood and positively associated with tension (Stolarski et al., 2014).

There have been different conceptualizations to understand the mechanism through TPs to well-being and mental health. More specifically, Cunningham et al. (2015) applied dual-pathway model to explain the relationship between time perpectives and well-being. In a bottom-up fashion, one's choices in life are affected by their respective time perspectives (e.g Present Hedonistic). In turn, one's subjective well-being is altered by the results of these particular choices (e.g taking drugs). On a top-down fashion, one's time perspectives (e.g. Past Negative and Past Positive) affect how they evaluate their circumstances and experiences leading to different well-being outcomes. Based on Cunnigham et al. (2015) conceptualization, Stolarski et al. (2020) argued in their review that negative mental health and well-being related outcomes to be associated with deviation from BTP ,those of which include trait anxiety (Wu et al., 2019) and depression (McKay & Cole, 2020).

Despite numerous studies on the link between DBTP and mental health outcomes, there is little research on the variables that play a role in the development of DBTP. To our knowledge, there is only one study that have investigated the relationship between BIS and DBTP (Stolarski et al., 2021) More specifically, Stolarski et al. (2021) have studied BIS, family environment and TPs with his two-wave study, collecting data in two different time points with a one year time interval. They found that BIS and BAS are significantly associated with different time perspectives, while the quality of family environment one has growing up in to be secondary to temparement in the prediction of time perspectives . In their crossectional analysis, BIS appeared to be linked to Past-Negative, Present Fatalistic, Future Negative and DBTP scores, while in their longitudinal analysis of change in time perspectives, first-wave BIS scores was only able to be linked to second wave Future-Negative scores. These results are explained by the conceptual ideas of Matthews and Stolarski (2015) in which FN is likened to "avoidance" where one shies away from future threats, therefore BIS may make individuals susceptible to develop a negative view regarding their future through worrying. However, while conceptualizing time perspectives, Zimbardo and Boyd

(1999) emphasize that developmental influences makes individual differ on what kind of endorsements they have regarding temporal profiles; one of them being family. Moreover, Zimbardo and Boyd (2008) also mention “interpersonal dynamics” and “personal experiences” as possible influencers on TPs. Specifically, Laghi et al. (2009) propose that inherent inner working models (IWB) or the schema gathered through early interactions with caregivers are paralel to time perspectives in the sense that they carry representations of the past, present and future. Furthermore, looking beyond temperamental variables (e.g. BIS), we need another construct that could also tap into developmental environment and effect of intimate relationships while explaining the progression of DBTP.

1.4 Attachment and Psychological Distress

Attachment refers to the intimate bond formed between infant and the primary care giver (Ainsworth et al., 1978/2014). Bowlby (1988/2008) differentiates between the constructs of having an attachment, attachment behavior and attachment system. First of all, a desire to look for and maintain connection with a certain individual, particularly in dangerous circumstances, is postulated as having an attachment to that individual. On the other hand, attempts at getting close to the attached figure who is deemed to be handle things better than oneself are labelled as attachment behaviour, which is mainly activated in situations where someone is threatened by outside or inside sources. This type of behaviour starts at a young age and continue through one’s life. Assumed to be central to the human function and shared with other species to some degree, the main aim is deemed to be to protect the individuals. (Bowlby, 1988/2008). Moreover, Bowlby (1969) claims that attachment system controls the attachment behaviours and is innate in humans. A presence of threat and attached figure’s availability are continuously being monitored by this postulated system. If feelings of uneasiness and anxiety come to emerge as a result of this monitoring, attachment system is initiated to activate proximity seeking behaviours to attachment figure. Moreover, how patterns of behaviours came to be depend on one’s working models which stores information on oneself’, environment and attached figure based on their prior attachment experiences. Depending on the working models, different attachment patterns come to exist with accumulated experience between the child and the attached

figure. Positive experiences with the caregivers in terms of responsiveness to these proximity seeking behaviors are associated with a secure attachment (Ainsworth et al., 1978/2014). Thus, those with secure attachment would have IWB of self as a lovable subject, world as secure and attached figure as reliable. On the other hand, those who have insecure attachment see self as unlovable, attached figure as unreliable and world as a dangerous place. Moreover, these internal working models are also the reason why these attachment patterns are also seen in later years as individuals become adults (Holmes, 2001).

Furthermore, learned attachment patterns are thought to be relatively lasting over time, going far ahead of infancy and through early adulthood except for emotionally significant events that could alter them (Waters et al., 2000). It is thought that these attachment patterns from original attachment theory also apply to how adults are attached to their romantic partners, with different attachment histories associating with the certain adult attachment style one has (Kazan & Shaver, 1987). Moreover, romantic relationships' quality and attachment security may have its foundation in early experiences with attachment figures (Roisman et al., 2005). Adult attachment can be conceptualized and measured in two distinct dimensions: "attachment anxiety" and "attachment avoidance" (Brennan et al., 1998; Fraley et al., 2000; Mikulincer et al., 2003). Fears of abandonment and anxiety regarding partner's availability are depicted in attachment anxiety dimension. On the other hand, emphasis on being independent while being wary of one's partner and their emotional closeness are represented in attachment avoidance (Mikulincer& Shaver, 2005). Research on attachment related anxiety and avoidance indicates its involvement in individual differences in emotion regulation. For example, regulation of positive emotions was investigated in Goodall (2015)'s study; it was found that positive emotions were more likely to be dampened and less likely to be savored by avoidant individuals, making it a possible explanation that positive emotions are an unsettling force to their constant attempts at deactivating their attachment system. Notably, both attachment dimensions were associated with "negative time travel" of emotion dampening in which a person would attribute the reasons of a positive emotion inducing event to negative causes and would expect them to lead to bad outcomes in the future. Emotion regulation difficulties also has been found to be a mechanism linking attachment anxiety to anxiety symptoms (Nielsen et al., 2017). Moreover, anxiously attached individuals can use emotion focused regulation strategies, whereby individuals

focus on their current emotions when faced with a stressful situation, which would result in psychological symptoms (Pascuzzo et al., 2015).

The theoretical conceptualization of emotion regulation in relation to attachment can be traced back to Shaver and Mikulincer (2002)'s model. Shaver and Mikulincer (2002)'s attachment system model conceptualization, which is based on the findings of attachment, consists of three components. First component is related to activation of the attachment system, by which detection of cues of threat in the environment leads to an activation of attachment related behaviors. Second component involves gauging whether inherent or explicit attachment figures are available. Depending on one's attachment related history, outcome of this component changes. If the individuals are content with the attachment figure's availability, they involve themselves in "secure strategies" by which self-regulation, soothing, exploration and problem solving happens as end products. If the individuals are not sure about their attachment figure availability based on their history, this leads to an "attachment insecurity". Individuals are divided in the way they handle attachment insecurity in terms of either "hyperactivating strategies" stemming from a style of anxious attachment, or "deactivating strategies" coming from a style of avoidant attachment. Consequently, third component comes into the picture to deduce whether proximity seeking behavior is fruitful in this situation. If this condition is deemed to be positive, the person involve themselves in "hyperactivating strategies" by which they ruminate about the threat and constantly seek proximity to attachment figure. This corresponds to behavior of people with attachment anxiety. On the other hand, if proximity seeking behavior is deemed to be not a good option, this leads to "deactivating strategies". These strategies aim to dissociate oneself from threat related cues and deactivate attachment system altogether. Furthermore, this attitude is seen on people with attachment avoidance. The important point to emphasize in here is that while attachment anxiety promotes a rather "vigilant" attitude regarding threat cues of the environment, attachment avoidance works on the contrary by dissociating oneself from danger.

A recent meta-analysis by Zheng et al. (2020) has revealed that attachment anxiety and attachment avoidance are associated with depression, with the former having more strong relationship compared to latter one. Moreover, adult insecure attachment has also been linked to social anxiety (Manning et al., 2017; Read et al., 2018), depressive symptoms (Marganska et al., 2013; Dagan et al., 2018) and

generalized anxiety disorder (Marganska et al., 2013). On the other end of the spectrum lies secure attachment. Secure attachment (low scores on both attachment anxiety and avoidance) is related to higher relationship satisfaction (Eğeci & Gençöz, 2006). Likewise, Davis et al. (2016) indicated that individuals who had both low anxiety and avoidance scores also reported less psychological distress compared to individuals with high attachment avoidance and anxiety scores, making secure attachment a possible protective factor for psychological distress. Moreover, in a large adult population from Japan, only for those with secure attachment (low in attachment avoidance and anxiety) social support was linked to decreased psychological distress. While other variations in attachment dimensions lead to dissolution of the significant link between social support and psychological distress, with a nonsignificant opposite effect in dismissing style by which social support increased psychological distress (Kizuki & Fujiwara, 2018). Overall, it seems that attachment anxiety and attachment avoidance are contributing factors to psychopathology, while having a secure attachment seems beneficial for individual's mental health.

There have been limited number of studies to investigate the relationship between attachment and TPs. For example, Laghi et al. (2009) studied parent and peer attachment in a group of high school aged adolescents from Italy, expecting one's Internal Working Models (IWM) to affect how they remember the past and anticipate the future. Notably, they found that those who are securely attached had more endorsements of the adaptive time perspectives such as Past Positive, Future and Present Hedonistic. The idea of a secure base, which refers to the notion that a secure attachment figure can be a safe ground for children to explore their environment and turn to them for support if needed (Bowlby, 1988/2008), was noted as a possible influencer of the more optimistic way these adolescents constructed their experiences in the related time zones. Laghi et al. (2016), as part of another study, also found positive relationships between adaptive time perspectives (Past Positive, Future and Present Hedonistic) and attachment quality. While maladaptive time perspectives (Past Negative and Present Fatalistic) had negative correlations to attachment quality. In a similar vein, Akırmak (2014) studied peer, parent and adult attachment and its relation to individuals' TPs and DBTP in a sample of young adults as part of his study and found higher attachment anxiety and lower quality of attachment to father was related to higher DBTP scores in their regression analysis. Concluding that, attachment representations

were vital for the development of DBTP, although the causality couldn't be inferred certainly due to study being correlational. Overall, attachment seems to be an important factor for the development of both time perspectives and psychopathology, however the part of the equation for time perspectives are scant and the overall relationship between them needs to be studied.

1.5 Current Study

Both BIS (Stolarski et al., 2021) and attachment security (Akırmak, 2014) had been studied separately and found to be significantly associated with TPs. However, current evidence is limited since no other study linking these constructs together in relation to depression and anxiety exists. Thus, the aim of the current study is to unite these constructs in a model that will examine both BIS and attachment security's role on the development of TP and its relation to psychological distress. We expect that higher BIS individuals will have higher DBTP based on their attention to threat related information in environment. As previously mentioned, DBTP is related to quite detrimental outcomes in terms of mental health (Stolarski et al., 2020). Moreover, whether DBTP explains the mechanism through which BIS contributes to psychological distress in terms of depressive and anxious symptoms will be also examined. In other words, this study will explore the mediator role of DBTP in the relationship of BIS with depression and anxiety in a non-clinical population. Furthermore, previous studies also examined insecure attachment as a moderator between behavioral inhibition and reactivity to different kinds of stimuli. Specifically, attachment avoidance has been found to act as a moderator between BIS and sensory processing sensitivity, within low BIS individuals those who had low attachment avoidance had lower sensory processing sensitivity (Şengül-İnal et al., 2018). Attachment insecurity was also indicated as moderator for the relationship between BI and cortisol levels in toddlers, being behaviorally inhibited and insecurely attached associating with more post cortisol secretions (Nachmias et al.,1996). In line with this, the moderator role of attachment will also be explored in our study in the link between BIS and DBTP, as Zimbardo emphasizes the socialization process on the development of TPs (1999) and attachment dimensions have both contributing factors to one's threat related rumination and attention (Shaver& Mikulincer, 2002).

The study emphasizes the transdiagnostic role of BIS in relation to psychological distress. According to Krueger and Eaton (2015), DSM-5 and ICD-10 have common approaches as to how they categorize the mental disorders: the disorders themselves should completely exist according to criteria or diagnosis is not given, they do not share commonalities and emergence of one disorder is separated from the risk of emergence of another one. However, the way for finding shared dimensions for mental disorders is paved by research as Krueger and Eaton (2015) claim there are several key factors contradicting this type of classification. For example, subthreshold instances of mental disorders are missed with categorical approach and comorbidity is a prevalent issue amongst proposedly distinct disorders. With this aim, several proposed transdiagnostic factors has been studied. In particular, the 15-year long NESDA research has revealed that variables tapping the dimensions of personality (neuroticism, self-esteem, behavioral inhibition system etc.) and cognition (repetitive negative thinking, cognitive reactivity etc.) to be related to both anxiety and depression; signaling the way for transdiagnostic perspective on these disorders (Struijs et al., 2021). In line with this we will investigate Behavioral Inhibition System (BIS) and its relation to both depression and anxiety through our proposed mechanism of Time Perspectives.

Thus, the hypotheses are as follows:

H_1: Higher levels of BIS will be associated with high levels of psychological distress (anxiety and depression).

H_2: Higher levels of BIS will be associated with high levels of DBTP.

H_3: Higher levels of DBTP will be associated with high levels of psychological distress (anxiety and depression).

H_4: DBTP will mediate the relationship between BIS and psychological distress (anxiety and depression).

H_5: The association of BIS with DBTP is expected to change depending on the level of attachment anxiety. More specifically, BIS will be more strongly associated with DBTP for the individuals who also experience elevated levels of attachment anxiety.

H_6: The association of BIS with DBTP is expected to change depending on the level of attachment avoidance. More specifically, BIS will be weakly associated with DBTP for the individuals high in attachment avoidance.

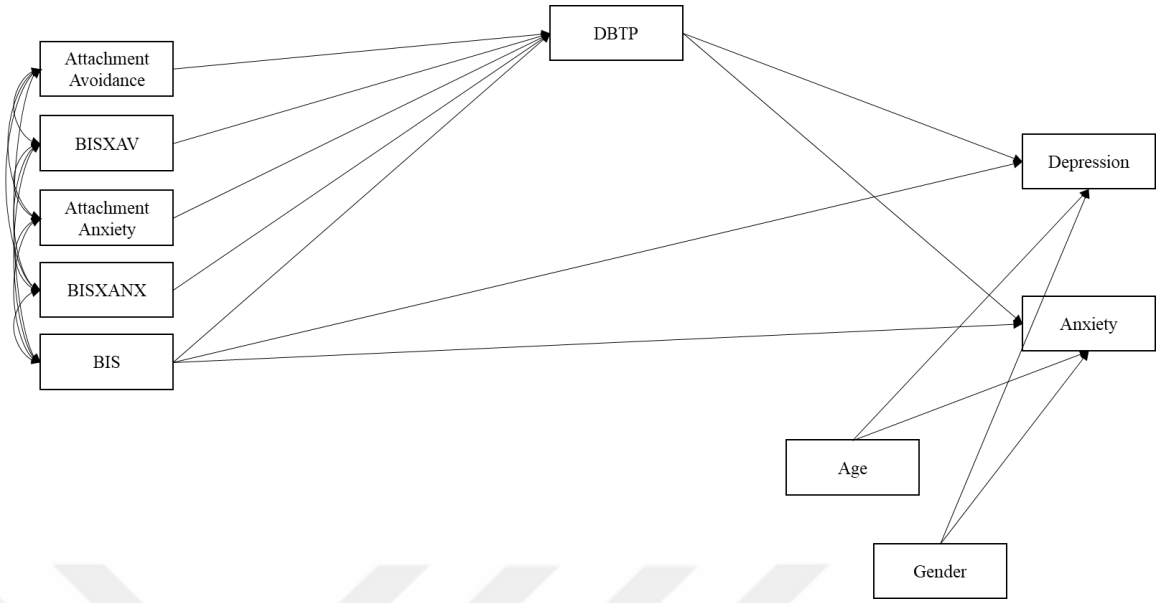

Figure 1.1 Proposed Model

Note. Mediator role of DBTP and moderator roles of attachment avoidance and attachment anxiety will be investigated in the association between BIS and psychological distress.

Chapter 2:
METHOD

2.1 Participants

Initially, 417 participants completed the surveys. However, the responses of the participants above age 65 as well as the univariate and multivariate outliers were deleted reducing the total number of participants to 378 (Female 74.3%). This final sample included an age range of 18 to 65 (*M*= 33.18, *SD*= 12.16). 181(47.63%) participants had an undergraduate degree, 111 (29.36%) participants had a high school degree, 73(19.31%) participants had a master's degree, 8 (2,12%) participants had a doctorate degree, 5(1.32%) participants had a two year-degree and 1(0,26%) participant had completed primary school. Examining the type of longest-lived settlement, 257 (68%) participants lived in big cities, 59 (15.6%) participants lived in cities, 52 (13.8%) participants lived in districts, 3 (0.8%) participants lived in towns, 7 (1.9%) participants lived in villages. Of all 378 participants, 181(47.9%) participants were from middle SES, 99 (26.2%) participants were from middle-high SES, 57 (15.1%) participants were from low-middle SES, 31 (8.2%) participants were from low SES and 10 (2.6%) participants were from high SES. 203 (53.7%) participants reported that they are currently involved in a romantic relationship, while 175 (46.3%) participants were not in active romantic relationships. 58.73% (n= 222) of participants stated their marital status as single, 35.18% (n= 133) of participants stated their marital status as married and 5.29% (n= 20) of participants stated their marital status as divorced. 0.79% (n= 3) participants chose not to give information related to their marital status.

Table 2.1 Descriptives of Study Sample

Demographic Variables	**N**	**Percentage (%)**
Gender		
Male	97	25.7
Female	281	74.3
Education Level		
Doctorate	8	2.12
Master's	73	19.31

Undergraduate Degree	181	47.88
Two Year-Degree	5	1.32
Highschool Degree	111	29.36
Primary School	1	0.26
Longest Lived Settlement		
Big City	257	68
City	59	15.6
District	52	13.8
Town	3	0.8
Village	7	1.9
Income Level		
High Income	10	2.6
Middle-High Income	99	26.2
Middle Income	181	47.9
Low-Middle Income	57	15.1
Low Income	31	8.2
Romantic Relationship Status		
Yes	203	53.7
No	175	46.3
Marital Status		
Single	222	58.73
Married	133	35.18
Divorced	20	5.29
Failed to identify	3	0.79

2.2 Measures

2.2.1 Zimbardo's Time Perspective Inventory (ZTPI)

Zimbardo and Boyd (1999) have developed 56-item ZTPI to measure time perspectives. Original ZTPI has five subscales: Past Negative (PN), Past Positive (PP), Present Hedonistic (PH), Present Fatalistic (PF) and Future (F). PN items (i.e., "It's hard for me to forget unpleasant images of my youth") measure negative attitudes

toward past, while PP items (i.e., “It gives me pleasure to think about my past”) scores indicate positive attitudes about one’s past. PH items (i.e., “I take risks to put excitement in my life”) and PF items (i.e., “My life path is controlled by forces I cannot influence”) reflect hedonistic and fatalistic views of the present, respectively. Finally, F items (i.e., “Meeting tomorrow’s deadline and doing other necessary work comes before tonight’s play.”) are deemed to measure a positive attitude about future. Participants use 5-Likert type scale to answer items and higher scores indicate more endorsements of respective time perspective dimensions (1 = very untrue, 5 = very true). ZTPI’s five scales demonstrated acceptable reliability scores (α = .74 to .82). Akırmak (2019) has adapted ZTPI to Turkish (α = .69 to .84) yielding adequate test-retest reliability scores. A sixth subscale with adequate reliability score (α= .75) named Future Negative (FN) has been added later (Carelli et al., 2011). FN items (α = .88) has been adapted by Ranjbar and colleagues to Turkish (2022). In this study, PN (α = .85), PH (α = .80), PP (α = .80), PF (α = .65), FP (α = .70) and FN (α = .81) scales had acceptable reliability scores.

2.2.2 Behavioral Activation and Behavioral Inhibition Scales (BIS/BAS)

Carver and White (1994)’s BIS (Behavioral Inhibition System) scale of BIS/BAS scales was used to measure participants’ BIS sensitivity, with high scores indicating higher sensitivity of BIS. The subscale is composed of 7 items yielding satisfactory levels of internal consistency (α = .74) Participants give answers based on 4-likert type options, from 1 (very true of me) to 4 (very false for me). It has good convergent and discriminative validity. Şişman (2012) has adapted the BIS/BAS for Turkish culture with the same factor structure, reporting good convergent validity based on its correlations with sensation seeking and impulsivity, in addition to an internal consistency coefficient of .69. In our study, BIS subscale had a Cronbach alpha of .71.

2.2.3 Experiences in Close Relationships- Revised (ECR-R)

Originally developed by Fraley et al. (2000), Experiences in Close Relationships - Revised (ECR-R) is a 36 item 7-likert type (1 = disagree strongly, 7 = agree strongly) adult attachment scale. It measures participants’ scores on attachment insecurity through two dimensions as attachment avoidance (α = .94) and attachment anxiety (α = .91). It

also has convergent and discriminant validity evidence based on social diary ratings with partners and family/friends (Sibley et al., 2005). Two factor Turkish version has been standardized by Selçuk et al. (2005). It also has satisfactory levels of internal consistency (α = .90 and α = .86 for attachment avoidance and attachment anxiety, respectively) and test-retest reliability (*r* =.81 and *r* = .82) values for both subscales. Furthermore, ECR-R has validity evidence based on its significant associations with variables such as self-esteem, relationship happiness, concerns about disapproval and separation, pleasing others, and preference for solitude (Selçuk et al., 2005). We found adequate Cronbach alpha levels for both attachment anxiety (α = .88) and attachment avoidance (α = .91) in this study.

2.2.4 Generalized Anxiety Disorder-7 (GAD-7)

GAD -7 (Spitzer et al., 2006) is a brief screening tool for measuring generalized anxiety disorder symptoms for the past week. It has good internal reliability (α = .92), test-retest reliability. It has construct validity evidence based on its correlations between number of clinic visits, disability days and difficulty experienced due to the presence of symptoms. Participants respond to 7 items via a 4-likert type scale (0 = never, 3 = nearly every day) and get a total score based on their answers. One factor structure has been validated in Turkish by Konkan et al. (2013), with good construct validity and internal reliability (α = 0.85). In this study, GAD-7(α = .91) had a satisfactory Cronbach alpha.

2.2.5 Patient Health Questionnaire-9 (PHQ-9)

Developed by Kroenke et al. (2001), PHQ-9 is 9-item self-report scale measuring depression symptoms. It has good internal consistency reliability (α = .89), test-retest reliability and validity. Answered on a 4-Likert type scale (0 = never, 3 = nearly every day), sum of all items makes up the PHQ-9 score indicating level of depression symptoms. It has been adapted to Turkish population (Sarı et al., 2016) with a Cronbach alpha of 0.84. In this study, PHQ-9(α = .85) had a sufficient Cronbach alpha level.

2.3 Procedure

Participants aged eighteen or older was eligible for the participation of the study. Convenience sampling was used to collect data. Social media platforms were used to distribute the survey link through the internet. The study got approval from Koç University's Institutional Review Board (IRB) before the start of the data collection. Participants had access to the questionnaires through a Qualtrics web link. The participants were first instructed to read and approve the informed consent. Those who give informed consent were able to continue on with the study. First, a demographic information form was filled. Then, they had to complete the aforementioned scales. Average time of completion of scales were 24.5 minutes.

2.4 Statistical Analysis

DBTP score was calculated based on the formula recommended by Rönnlund et al. (2017). Here "o" indicates optimal scores of respective dimensions of ZTPI scale determined by Zimbardo and Boyd (2008) (oPN= 1.95, oPP= 4.6, oPF =1.5, oPH= 3.9, oF= 4.0, oFN= 1.8), while "e" points to one's average subscale points of answers to the respective scales' items.

DBTP is calculated according to the formula below:

$$\sqrt{\begin{matrix}(oPN - ePN)^2 + (oPN - ePN)^2 + (oPP - ePP)^2 + (oPP - ePP)^2 + (oPF - ePF)^2 \\ +(oPH - ePH)^2 + (oF - eF)^2 + (oFN - eFN)^2\end{matrix}}$$

In the first part of the analysis, IBM SPSS Statistics for Windows was used to analyze demographic variables and compute reliability scores of scales and zero-order correlations. To test the mediated moderation model, path analysis via IBM SPSS AMOS 28 was done with. Model fit was evaluated according to the model fit criteria presented in Table 2.2

Table 2.2 Fit Criteria

Fit Index	Good Fit	Acceptable Fit	Source
x^2/df		< 5	Kline (2005)
RMSEA	RMSEA<.05	.05<RMSEA<.08	Browne and Cudeck (1993)

SRMR		SRMR<.08	Hu and Bentler (1999)
GFI	.95<GFI	.90<GFI	Marsh and Grayson (1995), Schumacker and Lomax (1996)
CFI	95<CFI		Hu and Bentler (1999)

For post hoc analyses of the significant interactions were performed by PROCESS macro for SPSS (model 1, Hayes, 2018) hypothesis, bootstrap analysis with 5000 samples (95% confidence interval).

Chapter 3:
RESULTS

3.1 Zero-Order Correlations

Age of participants and the scores of attachment anxiety, depression, anxiety, and BIS had significant negative correlations (*r*= -.25, *p* < .001*; r*= -.16, *p*= .002*; r*= -.18, *p*= <.001*; r*= -.13, *p*= .014).

BIS scores significantly correlated with depression and anxiety scores (*r*= .30, *p*< .001; *r*= .43, *p*<.001). Furthermore, BIS and DBTP scores had a significant positive relationship (*r*= .44, p< .001). Moreover, BIS and attachment anxiety were positively correlated (r= .38, p<.001) while BIS and attachment avoidance did not have a statistically significant relationship (*r*= .08, *p*= .111).

Furthermore, DBTP scores were significantly positively correlated with attachment anxiety and attachment avoidance (*r*=.61, *p*<.001; *r*=.36, *p*<.001). DBTP was also significantly related to depression and anxiety (*r*=.58, *p*<.001; *r*= .57, *p*= <.001). Attachment anxiety was positively related to attachment avoidance, depression, and anxiety (*r*= .44, *p*= <.001; *r*= .49, *p*<.001; *r*= .50, *p*= <.001).

Furthermore, there was a significant positive correlation between attachment avoidance and depression and anxiety (*r*= .30, *p*< .001, *r*= .25, *p*<.001). Depression scores were positively correlated with anxiety (*r*= .74, *p* <.001).

Table 3.1 Zero-Order Correlations

	1	2	3	4	5	6	7	8
1 Age	-							
2 Gender	-.035							
3 BIS	-126*	-.240**						
4 DBTP	-.100	-.017	.442**					
5 AAN	-.249**	-.090	.376**	.609**				
6 AAV	.083	-.043	.082	.356**	.440**			
7 DEP	-.157**	-.077	.302**	.584**	.489**	.296**		
8 ANX	-.178**	-.081	.428**	.572**	.507**	.245**	.739**	-
X	33.38	1.26	22.30	2.74	3.49	2.66	8.11	6.23
SD	12.16	.44	3.41	.86	1.05	1.06	5.66	5.22

α	-	-	.71	-	.88	.91	.85	.91
Min.	18	1	14	.53	1.33	1.00	.00	.00
Max.	65	2	28	5.21	6.39	5.78	24	21

Note, N=378, **p*<.05, ***p*<.01. BIS= Behavioural Inhibition System, DBTP= Deviance from Balanced Time Perspective, AAN= Attachment Anxiety, AAV= Attachment Avoidance, DEP= Depression, ANX= Anxiety

3.2 The Path Analysis

The path analysis presented in the Figure 3.1 was run in SPSS Amos 28.0 to test the proposed mediator role of DBTP between BIS and psychological distress. Moreover, presented model also accounted for testing the moderator role of attachment security between BIS and DBTP.

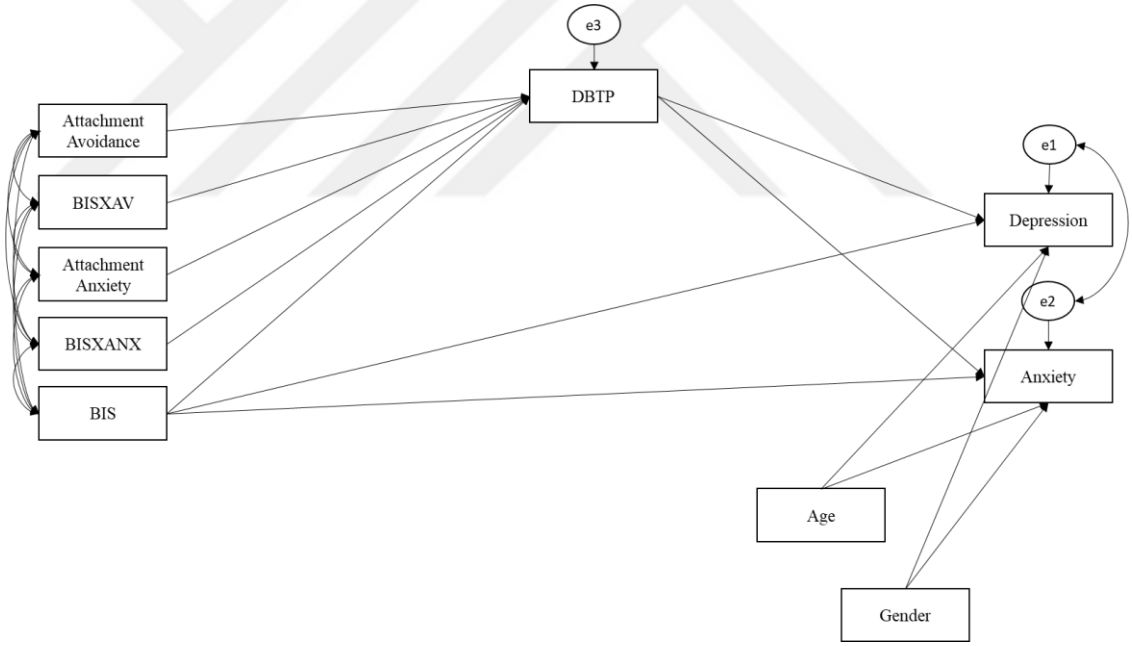

Figure 3.1 Proposed Model

Note. BIS= Behavioral Inhibition System, BISXAV= BIS and Attachment avoidance interaction term, BISXANX= BIS and attachment anxiety interaction term. Results of the model analysis were investigated according to fit index presented in Table 2.2.

The results of the model demonstrated a poor fit to the data based on the criteria listed above (x^2/df = 4.988, *RMSEA* = .103, *SRMR*=.0661, *GFI*= .951, *CFI*= .924).

However, an examination of modification indices suggested that model fit can be improved by adding additional constraints between age and attachment anxiety, age and attachment avoidance and BIS and gender.

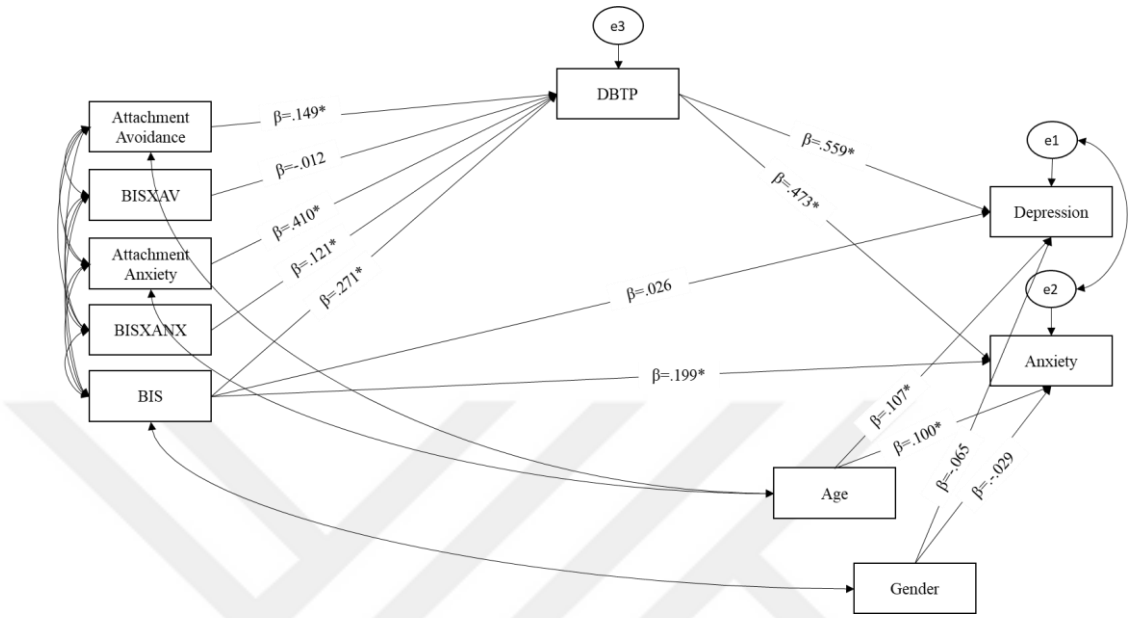

Figure 3.2 Modified Model

Note. *= p<.05, BIS= Behavioral Inhibition System, BISXAV= BIS and Attachment avoidance interaction term, BISXANX= BIS and attachment anxiety interaction term

Following the modifications, the model demonstrated acceptable fit to data (x^2/df = 2.605, *RMSEA* = .065, *SRMR*= .0431, *GFI*= .977, *CFI*= .974). Furthermore, the model fit showed significant improvement following the modifications as shown by the Chi-Square difference test (x^2(3) = 57.856, p<.001). Results indicated that, BIS was significantly related with anxiety (β = .199, p=.005), but not with depression (β=.026, p= .490*)*. Moreover, BIS had a significant relationship with DBTP (β =.271, p=.021). DBTP was significantly positively related to both anxiety (β=.473, p=.023) and depression (β=.559, p=.015). Attachment anxiety and attachment avoidance were also significantly linked to DBTP (β = .410, p=.011, β = .149, p=.020; respectively)

Indirect effect of BIS on both depression and anxiety through DBTP were statistically significant (b= .863, p = .012; b= .670, p= .013, respectively). Therefore, it can be concluded that DBTP significantly mediated the relationship between BIS and depression and anxiety.

Among the interaction terms, only the interaction between BIS and attachment anxiety had a significant relationship with DBTP (β= .121, p= .033), while BIS and attachment avoidance interaction term did not result in statistical significance (β= -.012, p= .870).

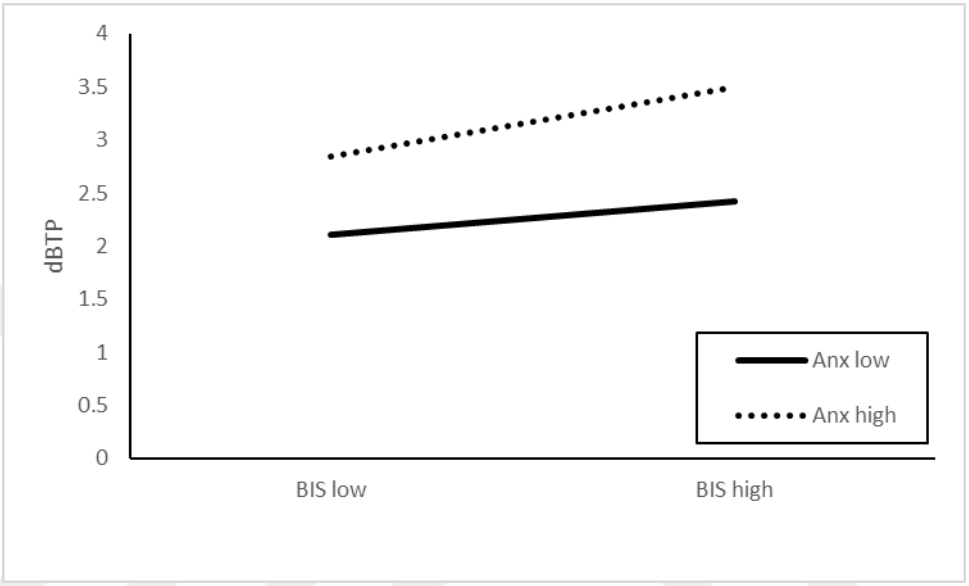

Figure 3.3 DBTP Plot

Additionally, to further examine the moderator role of attachment anxiety in the relationship between BIS and DBTP, PROCESS (model 1) was run in SPSS. Results did not confirm the significant interaction effects observed in the path analysis and revealed that the association of BIS with DBTP was statistically significant for both 16th percentile (b=.0455, t =3.05, p=.0024) and 84th percentile (b= .0947, t=6.08, p<.001) levels of attachment anxiety. As the level of attachment anxiety increases, the association of BIS with DBTP becomes stronger. Even though the findings do not indicate a significant interaction between BIS and attachment anxiety, we can suggest the presence of an additive effect. That is, two variables have two separate effects on a DBTP without showing the tendency to augment the impact of each other, this relationship shows itself in terms of an additive effect, by which higher BIS and higher attachment anxiety result in a higher DBTP in a cumulative manner.

Finally, according to Harman's single factor test, 15.72%. of total variance was shared by measurements in the study, providing support for not having a common

method bias. Overall, path analysis results indicate that the direct effects of BIS on anxiety was significant, while BIS on depression was not. This partially supported our first hypothesis. BIS's direct effect on DBTP was also significant, supporting our second hypothesis. The direct effects of DBTP on depression and anxiety were significant, which supported our third hypothesis. The evidence for the significant mediator role of DBTP in the relationship between BIS and depression and anxiety was found, supporting our fourth hypothesis. Finally, the moderator roles of attachment anxiety and avoidance was not supported, although there was an additive effect of attachment anxiety on the relationship between BIS and DBTP. Thus, our fifth and sixth hypotheses were not supported.

Chapter 4:
DISCUSSION

4.1 The Present Study

The present study examined the relationship between behavioral inhibition system (BIS) with depression and anxiety while focusing on the mediator role of how much one deviates from a balanced time perspective (DBTP) in this relationship. Furthermore, we also examined whether attachment avoidance and attachment anxiety moderated the expected relationship between BIS and DBTP. The results revealed support for the mediation hypothesis, as DBTP mediated both BIS and depression and BIS and anxiety association, indicating a possibility that elevated BIS sensitivity is linked with greater deviance from a BTP which may have triggered psychological distress manifesting itself in the form of depressive and anxiety symptoms. However, the postulated hypothesis for the moderator role of attachment avoidance and attachment anxiety between BIS and DBTP was not supported. Only attachment anxiety seemed to have an additive effect with BIS on DBTP, in which high BIS and high attachment anxiety leading DBTP scores to increase in a cumulative manner.

4.2 Direct Effects of BIS and DBTP

In the current study, BIS was found to be linked to anxiety in our both correlational and path analysis. However, BIS and depression's significant correlation did not translate into a significant direct path in our respective path analysis. According to Gray (1994)'s theory BIS underlies the emotion "anxiety", as environmental cue of threat and novelty leads to inhibition of ongoing behavior and increases in attention and arousal. So, this is in line with the essence of RST which puts emphasis on the BIS' role in the inducement of anxiety and its general positive relationship with anxiety (Bijttebier et al.,2009). However, the finding for depression was not as expected, since previous research reported BIS mostly to be related to depression as well, although not as clear-cut and strong as the relationship between BIS and anxiety (Struijs et al.,2018; Bijttebier et al., 2009; Katz et al., 2020). This finding may have been caused by several reasons, including a lack of BAS in our study and/or measurements not differentiating between depression types. Firstly, to elaborate, previous research found unsignificant

relations between BAS and depression (Struijs et al.,2018). However, the unstable nature of findings in the literature regarding BAS and its relationship to depression have been connected by Bitjteiber et al. (2009) to how studies failed to account for differences between anxious depression and anhedonic depression. As Gray himself, different points in time, postulated different roles of BIS and BAS in their relation to depressive symptomology, with BIS implicated in anxious (Gray, 1987) and BAS implicated in anhedonic depression (Gray, 1991a). Moreover, a different line of stream in RST research advocated for BIS and BAS to be examined simultaneously to understand psychopathology (Corr, 2002). Therefore, the fact that we have failed to replicate significant relationship between BIS and depression may have stem from not examining the interaction between BIS and BAS and how this interaction is associated with different depression types. On the other hand, we must emphasize that BIS was able to affect depressive symptoms through DBTP in our mediation analysis, which provides support for the argument that BIS alone falls short on explaining psychological distress (Takahashi et al., 2015). In other words, perhaps, while BIS is able to explain some variance of anxiety separately from DBTP, the same cannot be said for depression. This could also explain the inconsistent results relative to BIS and depression to some extent.

Furthermore, the results indicated elevated levels of BIS to be associated with more deviance from a BTP, which is also confirming the findings of Stolarksi et al. (2021), supporting our second hypothesis. Individuals with high BIS, as they are more inclined to focus on threats on environment as well as cues of punishment, could be adopting maladaptive time perspectives that could affect their BTP in a deviated direction, facilitating this hypervigilant attitude. DBTP's link to psychological distress was also found to be significant for both anxiety and depression, which is supporting the third hypothesis. These findings are also in line with Zimbardo and Boyd's (1999) claims regarding optimal functioning, as in a BTP state time perspectives blend in harmony allowing the individuals to adapt to their environments in the best possible way. That is, relevant time perspective dominance is achieved according to the situational demands (e.g., enjoying the leisurely time with PH dominance and changing it to F when work is to be done). Thus, it is reasonable to assume that an individual that deviates from an optimal profile would have to face consequences regarding their

mental health, in line with the literature highlighting various mental health disturbances (including anxiety and depression) to be linked with elevated levels of DBTP (Stolarski et al., 2020). Moreover, BTP promotes positive wellbeing related outcomes (Boniwell et al.,2010; Zhang et al.,2013; Drake et al., 2008; Griffin & Wildbur, 2020). The association between BTP and more positive mental health outcomes can also be explained by the dual-pathway model (Cunningham et al., 2015), which states that TPs affect both how evaluate our experiences (top-down) and how we decide which actions to do to promote our well-being (bottom-up). For example, TPs affect how we remember our past regardless of the real experiences' quality, they affect the view we have regarding our past, our present and what will happen in the future. Therefore, when people judge their well-being, they would be likely to rely on their attitudes towards their life in general. On the other hand, TPs can affect people's choices which can lead to different well-being outcomes. A person with high FP may get involved in health promoting behaviors, such as exercising, planning for their career, and having regular check-ups. All in all, TP operates in a seemingly two-way fashion when it comes to well-being according to this model.

4.3 Mediator Role of DBTP and Moderator Role of Attachment Dimensions

The current results also indicate the mediator role of DBTP between BIS and psychological distress was supported. Notably, DBTP appeared to act as a significant mediator for both BIS and anxiety and BIS and depression paths. BIS is a neurobiological system which indicates a reactiveness to cues of punishment, and it works through giving attention to the threat related cues in the environment (Gray, 1994). Therefore, it is plausible that individuals with high BIS would be more focused on the negative valanced components of their environment, relationships, and experiences, affecting their time perspectives' content negatively. In other words, all these factors could lead them to focus on their negative temporal frames, (especially the negative time perspective dimensions such as PN and PF) which derive its content heavily on the subjective negative past experiences and inability to do anything in the face of fate, respectively. Thus, a likely explanation is that an individual with high BIS whose focus is on threat cues and who experiences high anxiety would be more likely to see their past, present and future in negative terms by which their attitude towards

different time zones would be affected. This type of categorization would lead the maladaptive time perspectives to become more prominent in their mental worlds. This, in turn, can result in an unbalanced TP and through this unbalanced time perspectives can come psychological distress in terms of depression and anxiety.

Another novel finding of the current research reveals that the interaction of BIS and attachment anxiety on DBTP was significant. However, closer examination of this interaction indicates the presence of an additive effect rather than an interaction effect. Notably, additive effect of attachment anxiety was found on the relationship between BIS and DBTP, but the hypothesis of the moderator role was not supported. This may be due to the possibility that attachment anxiety and BIS affect DBTP through seemingly separate ways not augmenting the impact of one another. Notably, high BIS sensitivity is mainly related to an attention to threat related cues in the environment and subsequent intense experiences of anxiety, and attachment system carries qualities that are influential on attention to threat stimuli (Shaver& Mikulincer, 2002). However, attachment system goes further than just affecting attention. Both attachment avoidance and anxiety unite in the fact that they are both associated with less details in memories. However, they seem to differ in terms of their impact on other features of memories (Lau-Zhu et al.,2023). Especially, attachment anxiety seems to be linked to faster recalling of memories, and the memories recalled seem to be richer in emotional intensity (Lau-Zhu et al.,2023). Furthermore, attachment anxiety has been linked to the tendency to remember more negative affect congruent information in a negative affect induction setting (Pereg & Mikulincer, 2004) interpreting positive events as doubtful and negative (Shaver& Mikulincer, 2008) and false recalling of details (Hudson& Fraley,2018). All in all, there is a possibility that the effect of attachment anxiety on DBTP comes from various areas of affected attention, cognition, and memory, thus making attachment anxiety a separate force of its own compared to BIS. This could also be seen in our results in which attachment related anxiety seems to explain a greater amount of variance in DBTP when compared with BIS.

The study failed to show any moderator role of attachment avoidance in the relationship between BIS and DBTP. The hypothesized role of attachment avoidance was proposed based on Shaver and Mikulincer (2002)’s model, which argues that

attachment avoidance makes use of deactivating strategies which is related to shying away from "threat and attachment related information" to not activate the attachment system. However, memory deficits are seen in avoidant individuals. Avoidant individuals seem to struggle while remembering past events, in other words duration of retrieval takes longer for them. They also appear to blur the intensity of emotions of the retrieved memories, remembered memories lack proper structure and detail. They seem to distance themselves from the memories and their narratives regarding their memories are disrupted (Lau-Zhu et al., 2023). For example, in her study, Edelstein (2006) has found that attachment avoidance was related to memory encoding problems through working memory, and these problems were not only for negative attachment related information, but also positive attachment related information was affected too. While BIS is related to an overemphasis on punishment/non-reward cues on environment which leads to behavioral inhibition (Gray, 1991b), and we would expect that blocking out threat related information would lessen its effect on DBTP through the voids of memory in that valence. Avoidant individuals' tendency to also block out positive information related to attachment may have its greater contradictory effect than we had expected, by which they would also lack information to endorse positive time perspective which would affect the effect of BIS on DBTP scores in reverse.

4.4 Limitations and Future Studies

Our study was first to link BIS and its relationship to anxiety/depression through a lens of Zimbardo's Time Perspective Theory. However, the study also had limitations regarding its methodology and conceptualization. First, as the nature of the study as a correlational design, thus it is not possible to infer certain causal relationships between variables. Furthermore, findings of our study should be approached with caution. Next, the study participants were not representative of the whole population, especially in terms of its percentage of people of young age, female gender, and high education levels. Moreover, convenient sampling was used to find participants for the study, which further limited the sample's representativeness of the non-clinical population from Turkey.

Currently, there is no other established method of measuring time perspectives according to conceptualization of Zimbardo other than the subjective measure of ZTPI,

so the study used this measure to comply with the theory. Another limitation of the study stemmed from the fact that Present Fatalistic (PF) subscale's internal consistency reliability score was found to be relatively low (α= .65). This disadvantage is not only seen in our study, but also have been found in Turkish (Akırmak, 2021; α= .69) and Swedish adaptation (Carelli et al., 2011; α= .65) of the PF scale. Moreover, between original ZTPI's (Zimbardo& Boyd, 1999) subscales' internal consistency scores, lowest one belongs to PF (α= .74). Akırmak (2019) points out that PF subscale has items that have differences in relation to what they cover (e.g., one item contains past reminiscence) different from what the scale claims to measure, which could further complicate the unity of the PF dimension. All of this point out to question of whether PF dimension of the scale has instrumental problems on its own. However, the other variables in the study have other options for different operationalizations and other scales assessing temporal biases. For example, in our study only one operationalization was used in relation to attachment security, however attachment can be measured in different measurements with various attachment types (i.e., parents and peers). Another limitation was that we used PHQ-9 and GAD-7 for measuring depressive and anxious symptoms, respectively. However, these measures are unable to differentiate between anhedonic and anxious depression.

To properly address the limitations experimental designs and/or longitudinal studies could be conducted in the future to establish cause and effect relationships. Other variables besides time perspective in our study have other methods of objective assessments that could be used in future studies. Especially for attachment security, future studies could also test out attachment to parents and peers. Perhaps, future studies could also investigate these concepts in bigger and more representative samples going further than our limited sample. Moreover, to differentiate between anhedonic and anxious depression, appropriate scales for depression can be used. Future studies also could work on the ZTPI itself, considering the individual contributions of each item especially in PF scale to further ZTP research.

4.5 Conclusion and Clinical Implications

In conclusion, the present study was first to link the constructs of BIS and depression/anxiety through the time perspectives by Zimbardo. It was found that

Deviation from Balanced Time Perspective (DBTP) was a significant mediator between both BIS and depression/anxiety, indicating an important possibility regarding time perspectives' roles through which BIS can result in psychological distress. Overall, our study unites two theories: Zimbardo's Time Perspective Theory and Reinforcement Sensitivity Theory, in the landscape of depression and anxiety. This combination is also helpful as Zimbardo's Time Perspective Theory has been adapted into a psychotherapy method called "Time Perspective Therapy (TPT)", whose main aim is to help patients with developing a balanced time perspective (BTP). The therapy method is a derivation from Cognitive Behavioral Therapy (CBT), and it carries the same tenets such as being built upon therapeutic alliance and trust (Zimbardo et al.,2012). Mainly developed around treating PTSD patients, TPT involves several goals and steps which eventually help clients establish BTP. Among the stages of TPT includes identification of problem perspectives through ZTPI before the psychotherapy even starts, relaying information related to TPT and how time perspectives affect one's mental world, working on one's maladaptive time perspectives and balancing them with good ones whilst developing the mindset to switch between perspectives. Becoming contributors to their community, helping others, and maintaining close relationships are also being motivated in TPT while client goes through sessions (Sword et al., 2014; Zimbardo et al., 2012). Thus, our study can help this newly evolving psychotherapy to incorporate understanding of how time perspectives are related to temperament and depression/anxiety. In doing so, it may help future researchers and clinicians to shed light into this area to develop effective methods for the treatment of depression/anxiety in the context of Time Perspective Therapy and striving toward a BTP profile.

REFERENCES

Ainsworth, M. D. S. (2014). *Patterns of attachment: A psychological study of the strange situation* (digital print). Psychology Press. (Original work published 1978)

Akirmak, U. (2014). How is Time Perspective Related to Perceptions of Self and of Interpersonal Relationships? *The Spanish Journal of Psychology*, *17*, E92. https://doi.org/10.1017/sjp.2014.92

Akirmak, U. (2019). The validity and reliability of the Zimbardo time perspective inventory in a Turkish sample. *Current Psychology*, *40*(5), 2327–2340. https://doi.org/10.1007/s12144-019-0153-3

Altan-Atalay, A., Özarslan, I., & Biriz, B. (2020). Negative urgency and time perspective: Interactive associations with anxiety and depression. *The Journal of General Psychology*, *147*(3), 293–307. https://doi.org/10.1080/00221309.2020.1745139

Anagnostopoulos, F., & Griva, F. (2012). Exploring Time Perspective in Greek Young Adults: Validation of the Zimbardo Time Perspective Inventory and Relationships with Mental Health Indicators. *Social Indicators Research*, *106*(1), 41–59. https://doi.org/10.1007/s11205-011-9792-y

Bijttebier, P., Beck, I., Claes, L., & Vandereycken, W. (2009). Gray's Reinforcement Sensitivity Theory as a framework for research on personality–psychopathology associations. *Clinical Psychology Review*, *29*(5), 421–430. https://doi.org/10.1016/j.cpr.2009.04.002

Boniwell, I., Osin, E., Alex Linley, P., & Ivanchenko, G. V. (2010). A question of balance: Time perspective and well-being in British and Russian samples. *The Journal of Positive Psychology*, *5*(1), 24–40.

https://doi.org/10.1080/17439760903271181

Boniwell, I., & Zimbardo, P. G. (2015). Balancing Time Perspective in Pursuit of Optimal Functioning. In S. Joseph (Ed.), *Positive Psychology in Practice* (pp. 223–236). John Wiley & Sons, Inc. https://doi.org/10.1002/9781118996874.ch13

Bowlby, J. (1969). *Attachment and loss* (2nd ed). Basic Books.

Bowlby, J. (2008). *A secure base: Clinical applications of attachment theory* (Reprinted). Routledge. (Original work published 1988)

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In *Attachment theory and close relationships.* (pp. 46–76). The Guilford Press.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In *Testing structural equation models* (pp. 133–162). Sage.

Brozina, K., & Abela, J. R. Z. (2006). Behavioural inhibition, anxious symptoms, and depressive symptoms: A short-term prospective examination of a diathesis-stress model. *Behaviour Research and Therapy*, *44*(9), 1337–1346. https://doi.org/10.1016/j.brat.2005.09.010

Carelli, M. G., Wiberg, B., & Wiberg, M. (2011). Development and Construct Validation of the Swedish Zimbardo Time Perspective Inventory. *European Journal of Psychological Assessment*, *27*(4), 220–227. https://doi.org/10.1027/1015-5759/a000076

Carver, C. S., & White, T. L. (1994). *Behavioral Inhibition, Behavioral Activation, and Affective Responses to Impending Reward and Punishment: The BIS/BAS Scales*. *39*(2), 319–333.

Coll, C. G., Kagan, J., & Reznick, J. S. (1984). Behavioral Inhibition in Young

Children. *Child Development*, *55*(3), 1005. https://doi.org/10.2307/1130152

Corr, P. J. (2002). J. A. Gray's reinforcement sensitivity theory: Tests of the joint subsystems hypothesis of anxiety and impulsivity. *Personality and Individual Differences*, *33*(4), 511–532. https://doi.org/10.1016/S0191-8869(01)00170-2

Cunningham, K. F., Zhang, J. W., & Howell, R. T. (2015). Time Perspectives and Subjective Well-Being: A Dual-Pathway Framework. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time Perspective Theory; Review, Research and Application: Essays in Honor of Philip G. Zimbardo* (pp. 403–415). Springer International Publishing. https://doi.org/10.1007/978-3-319-07368-2_26

Dagan, O., Facompré, C. R., & Bernard, K. (2018). Adult attachment representations and depressive symptoms: A meta-analysis. *Journal of Affective Disorders*, *236*, 274–290. https://doi.org/10.1016/j.jad.2018.04.091

Davis, T. J., Morris, M., & Drake, M. M. (2016). The moderation effect of mindfulness on the relationship between adult attachment and wellbeing. *Personality and Individual Differences*, *96*, 115–121. https://doi.org/10.1016/j.paid.2016.02.080

Desmyter, F., & De Raedt, R. (2012). The Relationship Between Time Perspective and Subjective Well-being of Older Adults. *Psychologica Belgica*, *52*(1), 19. https://doi.org/10.5334/pb-52-1-19

Drake, L., Duncan, E., Sutherland, F., Abernethy, C., & Henry, C. (2008). Time Perspective and Correlates of Wellbeing. *Time & Society*, *17*(1), 47–61. https://doi.org/10.1177/0961463X07086304

Edelstein, R. S. (2006). Attachment and emotional memory: Investigating the source and extent of avoidant memory impairments. *Emotion*, *6*(2), 340–345. https://doi.org/10.1037/1528-3542.6.2.340

Eğeci, İ. S., & Gençöz, T. (2006). Factors Associated with Relationship Satisfaction: Importance of Communication Skills. *Contemporary Family Therapy*, *28*(3), 383–391. https://doi.org/10.1007/s10591-006-9010-2

Formane–Hoffman, V. L., Batts, K. R., Hedden, S. L., Spagnola, K., & Bose, J. (2018). Comorbid mental disorders among adults in the mental health surveillance survey. *Annals of Epidemiology*, *28*(7), 468–474. https://doi.org/10.1016/j.annepidem.2018.03.002

Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology*, *78*(2), 350–365. https://doi.org/10.1037/0022-3514.78.2.350

Gladstone, G. L., Parker, G. B., Mitchell, P. B., Wilhelm, K. A., & Malhi, G. S. (2005). Relationship between self-reported childhood behavioral inhibition and lifetime anxiety disorders in a clinical sample. *Depression and Anxiety*, *22*(3), 103–113. https://doi.org/10.1002/da.20082

Gomez, A., & Gomez, R. (2002). Personality traits of the behavioural approach and inhibition systems: Associations with processing of emotional stimuli. *Personality and Individual Differences*, *32*(8), 1299–1316. https://doi.org/10.1016/S0191-8869(01)00119-2

Goodall, K. (2015). Individual differences in the regulation of positive emotion: The role of attachment and self esteem. *Personality and Individual Differences*, *74*, 208–213. https://doi.org/10.1016/j.paid.2014.10.033

Gray, J. A. (1987). *The psychology of fear and stress, 2nd ed.* (pp. x, 422). Cambridge University Press.

Gray, J. A. (1990). Brain Systems that Mediate both Emotion and Cognition. *Cognition & Emotion*, *4*(3), 269–288. https://doi.org/10.1080/02699939008410799

Gray, J. A. (1991a). Neural systems, emotion, and personality. In J. Madden (Ed.), *Neurobiology of learning, emotion, and affect* (pp. 273–306). Raven Press.

Gray, J. A. (1991b). The Neuropsychology of Temperament. In J. Strelau & A. Angleitner (Eds.), *Explorations in Temperament* (pp. 105–128). Springer US. https://doi.org/10.1007/978-1-4899-0643-4_8

Gray, J. A. (1994). Framework for a taxonomy of psychiatric disorder. In *Emotions: Essays on emotion theory.* (pp. 29–59). Lawrence Erlbaum Associates, Inc.

Griffin, E., & Wildbur, D. (2020). The role of balanced time perspective on student well-being and mental health: A mixed-methods study. *Mental Health & Prevention*, *18*, 200181. https://doi.org/10.1016/j.mhp.2020.200181

Hayes, A. F. (2018). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach (Methodology in the Social Sciences)* (2nd ed.). The Guilford Press.

Holmes, J. (2001). *John Bowlby and attachment theory* (Second edition). Routledge.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Hudson, N. W., & Fraley, R. C. (2018). Does attachment anxiety promote the encoding of false memories? An investigation of the processes linking adult attachment to memory errors. *Journal of Personality and Social Psychology*, *115*(4), 688–715. https://doi.org/10.1037/pspp0000215

Ingram, R. E., & Price, J. M. (2010). Understanding Psychopathology: The Role of Vulnerability. In R. E. Ingram & J. M. Price (Eds.), *Vulnerability to Psychopathology: Risk across the Lifespan* (2nd ed, pp. 3–17). Guilford Press.

Izadpanah, S., Schumacher, M., Bähr, A., Stopsack, M., Grabe, H. J., & Barnow, S. (2016). A 5-year longitudinal study of the adolescent reinforcement sensitivity as a risk factor for anxiety symptoms in adulthood: Investigating the indirect effect of cognitive emotion regulation. *Personality and Individual Differences*, *95*, 68–73. https://doi.org/10.1016/j.paid.2016.02.021

Kagan, J. (2010). Emotions and Temperament. In M. H. Bornstein (Ed.), *Handbook of cultural developmental science* (pp. 175–194). Psychology Press.

Kagan, J. (2022). Temperamental and Theoretical Contributions to Clinical Psychology. *Annual Review of Clinical Psychology*, *18*(1), 1–18. https://doi.org/10.1146/annurev-clinpsy-071720-014404

Kagan, J., Reznick, J. S., Clarke, C., & Snidman, N. (1984). *Behavioral Inhibition to the Unfamiliar*.

Kagan, J., & Snidman, N. (1999). Early childhood predictors of adult anxiety disorders. *Biological Psychiatry*, *46*(11), 1536–1541. https://doi.org/10.1016/S0006-3223(99)00137-7

Katz, B. A., Matanky, K., Aviram, G., & Yovel, I. (2020). Reinforcement sensitivity, depression and anxiety: A meta-analysis and meta-analytic structural equation model. *Clinical Psychology Review*, *77*, 101842. https://doi.org/10.1016/j.cpr.2020.101842

Kaufman, J., & Charney, D. (2000). Comorbidity of mood and anxiety disorders. *Depression and Anxiety*, *12*(S1), 69–76. https://doi.org/10.1002/1520-6394(2000)12:1+<69::AID-DA9>3.0.CO;2-K

Kaya Lefèvre, H., Mirabel-Sarron, C., Docteur, A., Leclerc, V., Laszcz, A., Gorwood, P., & Bungener, C. (2019). Time perspective differences between depressed patients and non-depressed participants, and their relationships with depressive

and anxiety symptoms. *Journal of Affective Disorders*, *246*, 320–326. https://doi.org/10.1016/j.jad.2018.12.053

Kazan, C., & Shaver, P. (1987). Romantic Love Conceptualized as an Attachment Process. *Journal of Personality and Social Psychology*, *5*(3), 511–524.

Kizuki, M., & Fujiwara, T. (2018). Adult Attachment Patterns Modify the Association Between Social Support and Psychological Distress. *Frontiers in Public Health*, *6*, 249. https://doi.org/10.3389/fpubh.2018.00249

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed). Guilford Press.

Konkan, R., Şenormanci, Ö., Güçlü, O., Aydin, E., & Z. Sungur, M. (2013). Yaygın Anksiyete Bozukluğu-7 (YAB-7) Testi Türkçe Uyarlaması, Geçerlik ve Güvenirliği. *Nöro Psikiyatri Arşivi*, *50*(1), 53–58. https://doi.org/10.4274/npa.y6308

Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, *16*(9), 606–613. https://doi.org/10.1046/j.1525-1497.2001.016009606.x

Krueger, R. F., & Eaton, N. R. (2015). Transdiagnostic factors of mental disorders. *World Psychiatry*, *14*(1), 27–29. https://doi.org/10.1002/wps.20175

Laghi, F., D'Alessio, M., Pallini, S., & Baiocco, R. (2009). Attachment Representations and Time Perspective in Adolescence. *Social Indicators Research*, *90*(2), 181–194. https://doi.org/10.1007/s11205-008-9249-0

Laghi, F., Pallini, S., Baumgartner, E., Guarino, A., & Baiocco, R. (2016). Parent and peer attachment relationships and time perspective in adolescence: Are they related to satisfaction with life? *Time & Society*, *25*(1), 24–39. https://doi.org/10.1177/0961463X15577282

Lau-Zhu, A., Williams, F., & Steel, C. (2023). Attachment patterns and autobiographical episodic memory functioning: A systemic review of adult studies to advance clinical psychological science. *Clinical Psychology Review*, *101*, 102254. https://doi.org/10.1016/j.cpr.2023.102254

Manning, R. P. C., Dickson, J. M., Palmier-Claus, J., Cunliffe, A., & Taylor, P. J. (2017). A systematic review of adult attachment and social anxiety. *Journal of Affective Disorders*, *211*, 44–59. https://doi.org/10.1016/j.jad.2016.12.020

Marganska, A., Gallagher, M., & Miranda, R. (2013). Adult attachment, emotion dysregulation, and symptoms of depression and generalized anxiety disorder. *American Journal of Orthopsychiatry*, *83*(1), 131–141. https://doi.org/10.1111/ajop.12001

Markarian, S. A., Pickett, S. M., Deveson, D. F., & Kanona, B. B. (2013). A model of BIS/BAS sensitivity, emotion regulation difficulties, and depression, anxiety, and stress symptoms in relation to sleep quality. *Psychiatry Research*, *210*(1), 281–286. https://doi.org/10.1016/j.psychres.2013.06.004

Marsh, H. W., & Grayson, D. (1995). Latent variable models of multitrait-multimethod data. In *Structural equation modeling: Concepts, issues, and applications.* (pp. 177–198). Sage Publications, Inc.

Matthews, G., & Stolarski, M. (2015). Emotional processes in development and dynamics of individual time perspective. In *Time perspective theory; Review, research and application: Essays in honor of Philip G. Zimbardo.* (pp. 269–286). Springer International Publishing/Springer Nature. https://doi.org/10.1007/978-3-319-07368-2_18

McKay, M. T., & Cole, J. C. (2020). The relationship between balanced and negative time perspectives, and symptoms of anxiety and depression. *Psychiatry*

Research, *293*, 113383. https://doi.org/10.1016/j.psychres.2020.113383

Mikulincer, M., & Shaver, P. R. (2005). Attachment theory and emotions in close relationships: Exploring the attachment-related dynamics of emotional reactions to relational events. *Personal Relationships*, *12*(2), 149–168. https://doi.org/10.1111/j.1350-4126.2005.00108.x

Mikulincer, M., Shaver, P. R., & Pereg, D. (2003). Attachment Theory and Affect Regulation: The Dynamics, Development, and Cognitive Consequences of Attachment-Related Strategies. *Motivation and Emotion*.

Morgan, B. E. (2006). Behavioral inhibition: A neurobiological perspective. *Current Psychiatry Reports*, *8*(4), 270–278. https://doi.org/10.1007/s11920-006-0062-7

Nachmias, M., Gunnar, M., Mangelsdorf, S., Parritz, R. H., & Buss, K. (1996). Behavioral Inhibition and Stress Reactivity: The Moderating Role of Attachment Security. *Child Development*, *67*(2), 508. https://doi.org/10.2307/1131829

Nielsen, S. K. K., Lønfeldt, N., Wolitzky-Taylor, K. B., Hageman, I., Vangkilde, S., & Daniel, S. I. F. (2017). Adult attachment style and anxiety – The mediating role of emotion regulation. *Journal of Affective Disorders*, *218*, 253–259. https://doi.org/10.1016/j.jad.2017.04.047

Olivera-Figueroa, L. A., Juster, R.-P., Morin-Major, J. K., Marin, M.-F., & Lupien, S. J. (2015). A time to be stressed? Time perspectives and cortisol dynamics among healthy adults. *Biological Psychology*, *111*, 90–99. https://doi.org/10.1016/j.biopsycho.2015.09.002

Oyanadel, C., & Buela-Casal, G. (2014). Time perception and psychopathology: Influence of time perspective on quality of life of severe mental illness. *Actas Españolas de Psiquiatría*, *42*(3), 99–107.

Papastamatelou, J., Unger, A., Giotakos, O., & Athanasiadou, F. (2015). Is Time

Perspective a Predictor of Anxiety and Perceived Stress? Some Preliminary Results from Greece. *Psychological Studies*, *60*(4), 468–477. https://doi.org/10.1007/s12646-015-0342-6

Pascuzzo, K., Moss, E., & Cyr, C. (2015). Attachment and Emotion Regulation Strategies in Predicting Adult Psychopathology. *SAGE Open*, *5*(3), 215824401560469. https://doi.org/10.1177/2158244015604695

Pereg, D., & Mikulincer, M. (2004). Attachment Style and the Regulation of Negative Affect: Exploring Individual Differences in Mood Congruency Effects on Memory and Judgment. *Personality and Social Psychology Bulletin*, *30*(1), 67–80. https://doi.org/10.1177/0146167203258852

Ranjbar, H. A., Abdulcebbar, A., Yilmaz, E., Kantarci, L., Altintas, S., Eskin, M., & Áltan-Atalay, A. (2022). Deviation from balanced time perspective and psychological distress: The mediating roles of cognitive fusion and experiential avoidance. *Current Psychology*. https://doi.org/10.1007/s12144-022-03203-x

Read, D. L., Clark, G. I., Rock, A. J., & Coventry, W. L. (2018). Adult attachment and social anxiety: The mediating role of emotion regulation strategies. *PLOS ONE*, *13*(12), e0207514. https://doi.org/10.1371/journal.pone.0207514

Roisman, G. I., Collins, W. A., Sroufe, L. A., & Egeland, B. (2005). Predictors of young adults' representations of and behavior in their current romantic relationship: Prospective tests of the prototype hypothesis. *Attachment & Human Development*, *7*(2), 105–121. https://doi.org/10.1080/14616730500134928

Rönnlund, M., Åström, E., & Carelli, M. G. (2017). Time Perspective in Late Adulthood: Aging Patterns in Past, Present and Future Dimensions, Deviations from Balance, and Associations with Subjective Well-Being. *Timing & Time Perception*, *5*(1), 77–98. https://doi.org/10.1163/22134468-00002081

Rotge, J.-Y., Grabot, D., Aouizerate, B., Pélissolo, A., Lépine, J.-P., & Tignol, J. (2011). Childhood history of behavioral inhibition and comorbidity status in 256 adults with social phobia. *Journal of Affective Disorders*, *129*(1–3), 338–341. https://doi.org/10.1016/j.jad.2010.07.031

Sandstrom, A., Uher, R., & Pavlova, B. (2020). Prospective Association between Childhood Behavioral Inhibition and Anxiety: A Meta-Analysis. *Research on Child and Adolescent Psychopathology*, *48*(1), 57–66. https://doi.org/10.1007/s10802-019-00588-5

Sari, Y. E., Kokoglu, B., Balcioglu, H., Bilge, U., Colak, E., & Unluoglu, İ. (2016). Turkish reliability of the patient health questionnaire-9. *Biomed Res*.

Sartorius, N., Üstün, T. B., Lecrubier, Y., & Wittchen, H.-U. (1996). Depression Comorbid with Anxiety: Results from the WHO Study on Psychological Disorders in Primary Health Care. *British Journal of Psychiatry*, *168*(S30), 38–43. https://doi.org/10.1192/S0007125000298395

Schofield, C. A., Coles, M. E., & Gibb, B. E. (2009). Retrospective reports of behavioral inhibition and young adults' current symptoms of social anxiety, depression, and anxious arousal. *Journal of Anxiety Disorders*, *23*(7), 884–890. https://doi.org/10.1016/j.janxdis.2009.05.003

Schumacker, R. E., & Lomax, R. G. (1996). *A beginner's guide to structural equation modeling.* (pp. xvi, 288). Lawrence Erlbaum Associates, Inc.

Selçuk, E., Günaydın, G., Sümer, N., & Uysal, A. (2005). Yetişkin Bağlanma Boyutları için Yeni Bir Ölçüm: Yakın İlişlkilerde Yaşantılar Envanteri-II'nin Türk Örnekleminde Psikometrik Açıdan Değerlendirilmesi. *Türk Psikoloji Yazıları*, *8*(5).

Şengül-İnal, G., Kirimer-Aydinli, F., & Sümer, N. (2018). The Role of Attachment

Insecurity and Big Five Traits on Sensory Processing Sensitivity. *The Journal of Psychology*, *152*(7), 497–514. https://doi.org/10.1080/00223980.2018.1482255

Shaver, P. R., & Mikulincer, M. (2002). Attachment-related psychodynamics. *Attachment & Human Development*, *4*(2), 133–161. https://doi.org/10.1080/14616730210154171

Shaver, P. R., & Mikulincer, M. (2008). Adult Attachment and Cognitive and Affective Reactions to Positive and Negative Events: Adult Attachment and Emotional Reactions. *Social and Personality Psychology Compass*, *2*(5), 1844–1865. https://doi.org/10.1111/j.1751-9004.2008.00146.x

Sibley, C. G., Fischer, R., & Liu, J. H. (2005). Reliability and Validity of the Revised Experiences in Close Relationships (ECR-R) Self-Report Measure of Adult Romantic Attachment. *Personality and Social Psychology Bulletin*, *31*(11), 1524–1536. https://doi.org/10.1177/0146167205276865

Şişman, S. (2012). Davranışsal İnhibisyon Sistemi / Davranışsal Aktivasyon Sistemi Ölçeği'nin Türkçeye Uyarlanması: Geçerlik ve Güvenirlik Çalışması. *Psikoloji Çalışmaları Dergisi*, *32*(2), 1–22.

Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A Brief Measure for Assessing Generalized Anxiety Disorder: The GAD-7. *Archives of Internal Medicine*, *166*(10), 1092. https://doi.org/10.1001/archinte.166.10.1092

Stolarski, M. (2016). Not restricted by their personality: Balanced Time Perspective moderates well-established relationships between personality traits and well-being. *Personality and Individual Differences*, *100*, 140–144. https://doi.org/10.1016/j.paid.2015.11.037

Stolarski, M., Bitner, J., & Zimbardo, P. G. (2011). Time perspective, emotional intelligence and discounting of delayed awards. *Time & Society*, *20*(3), 346–363.

https://doi.org/10.1177/0961463X11414296

Stolarski, M., Matthews, G., Postek, S., Zimbardo, P. G., & Bitner, J. (2014). How We Feel is a Matter of Time: Relationships Between Time Perspectives and Mood. *Journal of Happiness Studies*, *15*(4), 809–827. https://doi.org/10.1007/s10902-013-9450-y

Stolarski, M., Wojciechowski, J., & Matthews, G. (2021). Seeking the origins of time perspectives – Intelligence, temperament, or family environment? A one-year longitudinal study. *Personality and Individual Differences*, *169*, 110080. https://doi.org/10.1016/j.paid.2020.110080

Stolarski, M., Zajenkowski, M., Jankowski, K. S., & Szymaniak, K. (2020). Deviation from the balanced time perspective: A systematic review of empirical relationships with psychological variables. *Personality and Individual Differences*, *156*, 109772. https://doi.org/10.1016/j.paid.2019.109772

Struijs, S. Y., de Jong, P. J., Jeronimus, B. F., van der Does, W., Riese, H., & Spinhoven, P. (2021). Psychological risk factors and the course of depression and anxiety disorders: A review of 15 years NESDA research. *Journal of Affective Disorders*, *295*, 1347–1359. https://doi.org/10.1016/j.jad.2021.08.086

Struijs, S. Y., Lamers, F., Rinck, M., Roelofs, K., Spinhoven, P., & Penninx, B. W. J. H. (2018). The predictive value of Approach and Avoidance tendencies on the onset and course of depression and anxiety disorders. *Depression and Anxiety*, *35*(6), 551–559. https://doi.org/10.1002/da.22760

Sword, R. M., Sword, R. K. M., Brunskill, S. R., & Zimbardo, P. G. (2014). Time Perspective Therapy: A New Time-Based Metaphor Therapy for PTSD. *Journal of Loss and Trauma*, *19*(3), 197–201. https://doi.org/10.1080/15325024.2013.763632

Takahashi, Y., W. Roberts, B., Yamagata, S., & Kijima, N. (2015). Personality Traits Show Differential Relations with Anxiety and Depression in a nonclinical sample. *Psychologia*, *58*(1), 15–26. https://doi.org/10.2117/psysoc.2015.15

Takahashi, Y., Yamagata, S., Kijima, N., Shigemasu, K., Ono, Y., & Ando, J. (2007). Continuity and change in behavioral inhibition and activation systems: A longitudinal behavioral genetic study. *Personality and Individual Differences*, *43*(6), 1616–1625. https://doi.org/10.1016/j.paid.2007.04.030

Tang, A., Crawford, H., Morales, S., Degnan, K. A., Pine, D. S., & Fox, N. A. (2020). Infant behavioral inhibition predicts personality and social outcomes three decades later. *Proceedings of the National Academy of Sciences*, *117*(18), 9800–9807. https://doi.org/10.1073/pnas.1917376117

Tseferidi, S.-I., Griva, F., & Anagnostopoulos, F. (2017). Time to get happy: Associations of time perspective with indicators of well-being. *Psychology, Health & Medicine*, *22*(5), 618–624. https://doi.org/10.1080/13548506.2016.1226508

Vaidyanathan, U., Patrick, C. J., & Iacono, W. G. (2011). Patterns of comorbidity among mental disorders: A person-centered approach. *Comprehensive Psychiatry*, *52*(5), 527–535. https://doi.org/10.1016/j.comppsych.2010.10.006

Wang, Y., Hu, X., Han, J., Scalabrini, A., Hu, Y., Hu, Z., Tan, Z., Zhang, J., & Northoff, G. (2021). Time is of essence—Abnormal time perspectives mediate the impact of childhood trauma on depression severity. *Journal of Psychiatric Research*, *137*, 534–541. https://doi.org/10.1016/j.jpsychires.2020.10.039

Waters, E., Merrick, S., Treboux, D., Crowell, J., & Albersheim, L. (2000). Attachment Security in Infancy and Early Adulthood: A Twenty-Year Longitudinal Study. *Child Development*, *71*(3), 684–689. https://doi.org/10.1111/1467-8624.00176

Watson, D. C. (2019). Materialism: Temporal balance, mindfulness and savoring. *Personality and Individual Differences*, *146*, 93–98. https://doi.org/10.1016/j.paid.2019.03.034

World Health Organization. (2017). *Depression and other common mental disorders: Global health estimates*. World Health Organization; WHO IRIS. https://apps.who.int/iris/handle/10665/254610

World Health Organization. (2022). *Mental Disorders*. World Health Organization. https://www.who.int/news-room/fact-sheets/detail/mental-disorders

Wu, H., Zhou, R., Zhao, L., Qiu, J., & Guo, C. (2019). Neural bases underlying the association between balanced time perspective and trait anxiety. *Behavioural Brain Research*, *359*, 206–214. https://doi.org/10.1016/j.bbr.2018.10.039

Xie, J., Fang, P., Zhang, Z., Luo, R., & Dai, B. (2021). Behavioral Inhibition/Activation Systems and Depression Among Females with Substance Use Disorder: The Mediating Role of Intolerance of Uncertainty and Anhedonia. *Frontiers in Psychiatry*, *12*, 644882. https://doi.org/10.3389/fpsyt.2021.644882

Zajenkowski, M., Witowska, J., Maciantowicz, O., & Malesza, M. (2016). Vulnerable past, grandiose present: The relationship between vulnerable and grandiose narcissism, time perspective and personality. *Personality and Individual Differences*, *98*, 102–106. https://doi.org/10.1016/j.paid.2016.03.092

Zhang, J. W., Howell, R. T., & Stolarski, M. (2013). Comparing Three Methods to Measure a Balanced Time Perspective: The Relationship Between a Balanced Time Perspective and Subjective Well-Being. *Journal of Happiness Studies*, *14*(1), 169–184. https://doi.org/10.1007/s10902-012-9322-x

Zheng, L., Luo, Y., & Chen, X. (2020). Different effects of attachment anxiety and attachment avoidance on depressive symptoms: A meta-analysis. *Journal of*

Social and Personal Relationships, *37*(12), 3028–3050. https://doi.org/10.1177/0265407520946482

Zimbardo, P. G., & Boyd, J. (2008). *The time paradox: The new psychology of time that will change your life* (1st Free press paperback ed). Free Press.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology*, *77*(6), 1271–1288. https://doi.org/10.1037/0022-3514.77.6.1271

Zimbardo, P. G., Sword, R. M., & Sword, R. K. M. (2012). *The time cure: Overcoming PTSD with the new psychology of time perspective therapy* (1st ed) [Electronic resource]. Jossey-Bass.

Appendix A: Informed Consent

Onam Formu

Değerli Katılımcı,

Bu araştırma Koç Üniversitesi Klinik Psikoloji yüksek lisans öğrencisi Canan Sütemen tarafından Dr. Ayşe Altan Atalay danışmanlığında yürütülmektedir. Araştırmanın amacı, mizaç, bağlanma biçimleri ve zaman perspektifinin depresyon ve anksiyeteyle ilişkisini incelemektir. Çalışma kapsamında sizden çeşitli anketlere cevap vermeniz istenecektir. Çalışmann ortalama 25 dk sürmesi beklenmektedir.

Çalışmaya katılım tamamıyla gönüllülük esasına dayanmaktadır. Verdiğiniz cevaplar hiçbir şekilde kimlik bilgilerinizle eşleştirilmeyecek, gizli tutulacak ve proje araştırmacılarının dışında erişime açık olmayacaktır. Çalışma sonucunda elde edilecek bilgiler sadece bilimsel yayınlarda kullanılacaktır. Araştırmada düzgün veriler elde edilmesi adına, soruları dikkatli bir şekilde okumanız, cevaplandırmanız ve herhangi bir soruyu boş bırakmamanız gerekmektedir.

Çalışmanın size herhangi bir rahatsızlık vermesi beklenmemektedir. Çalışma tamamen gönüllü katılıma dayanmaktadır, herhangi bir rahatsızlık hissettiğiniz ve/veya devam etmek istemediğiniz anda yaptırım olmaksınız bırakma özgürlüğüne sahipsiniz.

Çalışmamıza katıldığınız için teşekkür ederiz.

Araştırmayla ilgili soru ve düşünceleriniz için araştırmacıyla iletişime geçebilirsiniz.

Canan Sütemen:

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip bırakabileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı olarak kullanılmasını kabul ediyorum.

☐Evet

☐Hayır

Appendix B: Demographic Form

Demografik Form

1. Kaç yaşındasınız? ____

2. Cinsiyetiniz: □ Kadın □ Erkek □ Diğer:____

3. Medeni durumunuz nedir?

- Bekar
- Evli
- Boşanmış
- Diğer: ___

4. Şu anda kiminle yaşıyorsunuz?

□ Anne ve babanızla □ Evde partnerimle

□ Annenizle □ Evde çocuklarımla

□ Babanızla □ Evde partnerim ve çocuklarımla

□ Akrabaların yanında □ Yurtta

□ Evde tek başına □ Diğer (lütfen açıklayın) _____

□ Evde arkadaşlarla

5. Ailenizin kaçıncı çocuğusunuz? _____

6. Kaç kardeşiniz var? _____

□Kız kardeş sayısı: ____ □Erkek kardeş sayısı: _____

7. Şu anda romantik bir ilişki içerisinde misiniz? Evet/Hayır

8. Çocuğunuz var mı? Evet/Hayır

9. Varsa, kaç çocuğunuz var? _____

10. En uzun süreli yaşadığınız yerleşim birimi (yaklaşık hayatınızın ilk 17 yıllı):

- Köy
- Bucak
- Kasaba

- İlçe
- Şehir
- Büyük şehir

11 Şu anda hangi şehirde yaşıyorsunuz? _____

12. En son bitirdiğiniz eğitim düzeyi (örn. ilkokul, lise, lisans, yüksek lisans vs.): _____

13. Aylık gelir seviyenizi nasıl değerlendirirsiniz?

□ Alt □ Alt-Orta □ Orta □ Üst-Orta □Üst

14.Hangi alanda eğitim aldınız veya almaktasınız? _____

15. Mesleğiniz: _____

16. Daha önce bir psikiyatrist tarafından tanı almış bir psikolojik rahatsızlığınız var mı?

17. Bir önceki soruya cevabınız "evet" ise lütfen tanıyı belirtiniz: _____

18. Daha önce ya da şu anda psikolojik yardım aldınız mı / almakta mısınız?

- Hayır.
- Evet, geçmişte.
- Evet, halen devam etmekte.

19. Bir önceki soruya cevabınız "evet" ise lütfen nasıl bir yardım aldığınızı belirtiniz (örn. ilaç tedavisi, psikoterapi vs.): _____

20. Önceki soruya cevabınız ilaç tedavisini içeriyorsa lütfen ilacın adını belirtiniz: _____

21. Anadiliniz Türkçe mi? Evet/Hayır

22. Değilse belirtiniz:____

Appendix C: Zimbardo’s Time Perspective Inventory

Zimbardo Zaman Perspektifi Envanteri

Lütfen aşağıdaki her bir maddeyi okuyunuz ve “Bu benim için ne kadar geçerli?” sorusunu, ölçek üzerinde uygun kutucuğu işaretleyerek yanıtlayınız. Lütfen hiçbir maddeyi atlamayarak maddelerin tümünü işaretleyiniz.

Zimbardo Zaman Perspektifi Envanteri (ZTPI)

		HİÇ DOĞRU DEĞİL (1)	DOĞRU DEĞİL (2)	NE DOĞRU NE DE YANLIŞ (3)	DOĞRU (4)	ÇOK DOĞRU (5)
1.	Bir kutlama için arkadaşlarla bir araya gelmenin hayattaki en büyük zevklerden biri olduğuna inanırım.					
2.	Çocukluğumu hatırlatan manzaralar, sesler ve kokular sıklıkla harika anıları geri getirir.					
3.	Kader hayatımda birçok şeyi belirler					
4.	Sık sık hayatımda neleri farklı yapmalıydım diye düşünürüm					
5.	Kararlarım genellikle etrafımdaki şeylerin ve insanların etkisi altında kalır.					
6.	Bir kişinin günü sabahtan planlanmış olmalı.					
7.	Geçmişim hakkında düşünmek bana keyif verir.					
8.	Düşünmeden hareket ederim.					
9.	İşlerin zamanında bitmemesi beni endişelendirmez.					
10.	Bir şeyi başarmak istediğimde kendime hedefler belirlerim ve bu hedeflere ulaşmak için belirli yöntemler düşünürüm.					

11.	Her şeyi göz önünde bulundurduğumda, geçmişimde hatırlanacak kötüden daha çok iyi şeyler bulunmakta.					
12.	En sevdiğim şarkıyı dinlerken, genellikle zamanın nasıl geçtiğini anlamam.					
13.	Yarının işlerini yetiştirmek ve diğer gerekli işleri yapmak, bu akşamın eğlencesinden önce gelir.					
14.	Her şey olacağına varır, bu nedenle ne yaptığımım bir önemi yoktur.					
15.	Geçmiş güzel günlerin nasıl olduğunu anlatan hikayeleri dinlemekten hoşlanırım.					
16.	Acı veren geçmiş deneyimlerim, zihnimde sürekli canlanır.					
17.	Hayatımı mümkün olduğunca dolu dolu yaşamaya çalışırım; anı yaşarım.					
18.	Randevulara geç kalmak keyfimi kaçırır.					
19.	Tercihen, her günümü son günümmüş gibi yaşamak isterim.					
20.	Güzel zamanlara ait mutlu anılar kolayca aklıma gelir.					
21.	Arkadaş ve yetkililere karşı olan yükümlülüklerimi zamanında yerine getiririm.					
22.	Geçmişten payıma düşen reddedilme ve kötü muameleden nasibimi aldım.					
23.	Fevri kararlar veririm.					
24.	Her günümü planlamaya çalışmak yerine, olduğu gibi yaşarım.					
25.	Geçmişimde, düşünmek istemediğim oldukça fazla tatsız anı var.					
26.	Hayatıma heyecan katmak benim için önemlidir.					
27.	Geçmişimde, geri alabilmeyi istediğim hatalar yaptım.					
28.	Yaptığın işten keyif almanın işi zamanında bitirmekten daha önemli olduğunu düşünürüm.					
29.	Çocukluğuma özlem duyarım.					
30.	Bir karar vermeden önce, yarar ve zararları tartarım.					

31.	Risk almak hayatımı sıkıcı olmaktan kurtarır.					
32.	Bana göre, hayat yolculuğunun tadını çıkarmak, sadece varış noktasına odaklanmaktan daha önemlidir.					
33.	Olaylar nadiren beklediğim gibi gelişir.					
34.	Eskiye ait tatsız görüntüleri unutmak benim için zordur.					
35.	Hedef, sonuç ve çıktıları düşünmem gerektiğinde, bu durum sürecin keyfini kaçırır ve faaliyetlerimin akışını bozar.					
36.	Anın tadının çıkarırken bile, kendimi geçmişte yaşadığım benzer deneyimlerle kıyaslama yaparken bulurum.					
37.	Her şey sürekli değiştiği için geleceğe dair plan yapamazsınız.					
38.	Hayatımın gidişatı benim etkiyemeyeceğim güçler tarafından kontrol edilir.					
39.	Yapabileceğim bir şey olmadığı için, gelecek hakkında kaygılanmanın bir anlamı yoktur.					
40.	İstikrarlı bir şekilde ilerleyerek, projeleri zamanında tamamlarım.					
41.	Ailem bir şeylerin eskiden nasıl olduğuyla ilgili konuşurken, kendimi bunları duymazdan gelirken bulurum.					
42.	Hayatıma heyecan katmak için riskler alırım.					
43.	Yapılacaklar listesi hazırlarım.					
44.	Genellikle, mantığımdan ziyade kalbimin sesini dinlerim.					
45.	Yapılması gereken bir iş olduğunu bildiğimde, cezbedici diğer şeylere karşı koyabilirim.					
46.	Kendimi anın heyecanına kapılırken bulurum.					
47.	Günümüz hayatı fazla karmaşık; geçmişin daha basit hayatını tercih ederdim.					
48.	Arkadaşlarımın öngörülebilir davranmalarındansa spontane davranmalarını tercih ederim.					
49.	Düzenli olarak tekrarlanan aile ritüelleri ve geleneklerini severim.					
50.	Geçmişte başıma gelen kötü şeyleri düşünürüm.					

51.	Eğer benim ilerlememi sağlayacaksa, zor ve ilginç olmayan görevlerde çalışmaya devam ederim.					
52.	Kazandıklarımı bugün keyif için harcamak, yarının güvencesi için biriktirmekten daha iyidir.					
53.	Genellikle şans, sıkı çalışmaktan daha iyi sonuç getirir.					
54.	Hayatta kaçırmış olduğum iyi şeyler hakkında düşünürüm.					
55.	Yakın ilişkilerimin tutkulu olmasını severim.					
56.	İşlerimi yetiştirmek için her zaman vakit olacaktır.					

Future Negative Items

I (11) Sıklıkla bir günde yapmayı planladığım her şey için zamanımın olmadığını düşünürüm.

II (12) Hayattaki hedeflerime genellikle nasıl ulaşabileceğimi bilmem.

III (27) Geceleri sıklıkla bir sonraki gün karşılaşacağım zorlukları düşünürüm.

IV (28) Sıklıkla arkadaşlarıma ve yetkililere karşı zorunluluklarımı yerine getiremeyeceğimi hissederim.

V (39) Eğer hızlı bir karar vermem gerekirse, aldığım kararın genellikle yanlış olduğundan endişelenirim.

VI (40) Farklı projeleri zamanında bitiremezsem diye baskı hissederim.

VII (63) Geleceğim hakkında düşünmek beni üzer.

VIII (64) Gelecek, düşünmeyi istemediğim kadar çok fazla sıkıcı kararı içerir.

Appendix D: Experiences in Close Relationships-Revised

Yakın İlişkilerde Yaşantılar Envanteri-II

(YIYE-II)

Aşağıdaki maddeler romantik ilişkilerinizde hissettiğiniz duygularla ilgilidir. Bu araştırmada sizin ilişkinizde yalnızca şu anda değil, genel olarak neler olduğuyla ya da neler yaşadığınızla ilgilenmekteyiz. Maddelerde sözü geçen "birlikte olduğum kişi" ifadesi ile romantik ilişkide bulunduğunuz kişi kastedilmektedir. Eğer halihazırda bir romantik ilişki içerisinde değilseniz, aşağıdaki maddeleri bir ilişki içinde olduğunuzu varsayarak cevaplandırınız. Her bir maddenin ilişkilerinizdeki duygu ve düşüncelerinizi ne oranda yansıttığını karşılarındaki 7 aralıklı ölçek üzerinde, ilgili rakam üzerine çarpı (X) koyarak gösteriniz.

Önemli Not: Ölçek maddelerinin bazılarında “yakın olmak” veya “yakınlaşmak” ifadeleri geçmektedir. Bu ifadelerle kastedilen partnerinizle duygusal yakınlık kurmak, düşüncelerinizi veya başınızdan geçenleri partnerinize açmak, partnerinize sarılmak ve benzeri davranışlardır. İlgili maddeler bu tanıma göre cevaplandırılır.

1----------2----------3----------4----------5----------6----------7

Hiç katılmıyorum Kararsızım/Fikrim Yok Tamamen Katılıyorum

1. Birlikte olduğum kişinin sevgisini kaybetmekten korkarım.	1	2	3	4	5	6	7
2. Gerçekte ne hissettiğimi birlikte olduğum kişiye göstermemeyi tercih ederim.	1	2	3	4	5	6	7
3. Sıklıkla, birlikte olduğum kişinin artık benimle olmak istemeyeceği korkusuna kapılırım.	1	2	3	4	5	6	7
4. Özel duygu ve düşüncelerimi birlikte olduğum kişiyle paylaşmak konusunda kendimi rahat hissederim.	1	2	3	4	5	6	7
5. Sıklıkla, birlikte olduğum kişinin beni gerçekten sevmediği kaygısına kapılırım.	1	2	3	4	5	6	7
6. Romantik ilişkide olduğum kişilere güvenip inanmak konusunda kendimi rahat bırakmakta zorlanırım.	1	2	3	4	5	6	7
7. Romantik ilişkide olduğum kişilerin beni, benim onları önemsediğim kadar önemsemeyeceklerinden endişe duyarım.	1	2	3	4	5	6	7

8. Romantik ilişkide olduğum kişilere yakın olma konusunda çok rahatımdır.	1	2	3	4	5	6	7
9. Sıklıkla, birlikte olduğum kişinin bana duyduğu hislerin benim ona duyduğum hisler kadar güçlü olmasını isterim.	1	2	3	4	5	6	7
10. Romantik ilişkide olduğum kişilere açılma konusunda kendimi rahat hissetmem.	1	2	3	4	5	6	7
11. İlişkilerimi kafama çok takarım.	1	2	3	4	5	6	7
12. Romantik ilişkide olduğum kişilere fazla yakın olmamayı tercih ederim.	1	2	3	4	5	6	7
13. Benden uzakta olduğunda, birlikte olduğum kişinin başka birine ilgi duyabileceği korkusuna kapılırım.	1	2	3	4	5	6	7

14. Romantik ilişkide olduğum kişi benimle çok yakın olmak istediğinde rahatsızlık duyarım.	1	2	3	4	5	6	7
15. Romantik ilişkide olduğum kişilere duygularımı gösterdiğimde, onların benim için aynı şeyleri hissetmeyeceğinden korkarım.	1	2	3	4	5	6	7
16. Birlikte olduğum kişiyle kolayca yakınlaşabilirim.	1	2	3	4	5	6	7
17. Birlikte olduğum kişinin beni terk edeceğinden pek endişe duymam.	1	2	3	4	5	6	7
18. Birlikte olduğum kişiyle yakınlaşmak bana zor gelmez.	1	2	3	4	5	6	7
19. Romantik ilişkide olduğum kişi kendimden şüphe etmeme neden olur.	1	2	3	4	5	6	7
20. Genellikle, birlikte olduğum kişiyle sorunlarımı ve kaygılarımı tartışırım.	1	2	3	4	5	6	7
21. Terk edilmekten pek korkmam.	1	2	3	4	5	6	7

22. Zor zamanlarımda, romantik ilişkide olduğum kişiden yardım istemek bana iyi gelir.	1	2	3	4	5	6	7
23. Birlikte olduğum kişinin, bana benim istediğim kadar yakınlaşmak istemediğini düşünürüm.	1	2	3	4	5	6	7
24.Birlikte olduğum kişiye hemen hemen her şeyi anlatırım.	1	2	3	4	5	6	7
25. Romantik ilişkide olduğum kişiler bazen bana olan duygularını sebepsiz yere değiştirirler.	1	2	3	4	5	6	7
26. Başımdan geçenleri birlikte olduğum kişiyle konuşurum.	1	2	3	4	5	6	7
27. Çok yakın olma arzum bazen insanları korkutup uzaklaştırır.	1	2	3	4	5	6	7
28. Birlikte olduğum kişiler benimle çok yakınlaştığında gergin hissederim.	1	2	3	4	5	6	7
29. Romantik ilişkide olduğum bir kişi beni yakından tanıdıkça, “gerçek ben”den hoşlanmayacağından korkarım.	1	2	3	4	5	6	7
30. Romantik ilişkide olduğum kişilere güvenip inanma konusunda rahatımdır.	1	2	3	4	5	6	7
31. Birlikte olduğum kişiden ihtiyaç duyduğum şefkat ve desteği görememek beni öfkelendirir.	1	2	3	4	5	6	7
32. Romantik ilişkide olduğum kişiye güvenip inanmak benim için kolaydır.	1	2	3	4	5	6	7
33. Başka insanlara denk olamamaktan endişe duyarım	1	2	3	4	5	6	7
34.Birlikte olduğum kişiye şefkat göstermek benim için kolaydır.	1	2	3	4	5	6	7
35.Birlikte olduğum kişi beni sadece kızgın olduğumda önemser.	1	2	3	4	5	6	7
36.Birlikte olduğum kişi beni ve ihtiyaçlarımı gerçekten anlar.	1	2	3	4	5	6	7

Appendix E: Behavioral Inhibition System Scale

Davranışsal İnhibisyon Sistemi Ölçeği

Bu testteki her madde insanların kendilerinden bahsederken kullandıkları bazı ifadeleri tanımlamaktadır. Lütfen her maddeyi okuyunuz ve size ne kadar uygun olup olmadığına karar veriniz. Her madde için, 4 seçenekten (Tamamen katılıyorum, Biraz katılıyorum, Biraz katılmıyorum, Hiç katılmıyorum) sizi en iyi tarif eden seçeneği işaretleyiniz.

Lütfen hiçbir maddeyi boş bırakmayınız ve her madde için sadece bir seçenek işaretleyiniz. Cevaplarınızın tutarlı olup olmayacağından endişe duymadan her maddeyi tek bir maddeymiş gibi cevaplayınız. Lütfen olabildiğince dürüst olunuz ve samimi cevaplar veriniz

	1= Tamamen Katılıyorum	2= Biraz katılıyorum	3 = Biraz katılmıyorum	4 = Hiç katılmıyorum
1- Bir insanın ailesi, hayatındaki en önemli şeydir.				
2- Başıma kötü bir şey gelmek üzere olsa bile, nadiren korkarım veya sinirlenirim.				
3- İstediğim şeyleri elde etmek için, her yolu denerim.				
4- Bir şeyi yapmakta iyiysem, onu devam ettirmeyi severim.				
5- Eğlenceli olacağını düşündüğüm yeni şeyleri denemeye her zaman istek duyarım.				
6- Nasıl giyindiğim benim için önemlidir.				
7- İstediğim şeyi elde ettiğimde, heyecanlı ve enerji dolu olurum.				
8- Eleştirilme veya azarlanma beni oldukça incitir.				
9- Bir şeyi istediğimde, genellikle onu elde etmek için elimden ne geliyorsa yaparım.				

10- Çoğu zaman bir şeyleri başka bir sebep olmaksızın, sırf eğlenceli olabilecek diye yapmak isterim				
11- Saç kestirmek gibi şeylere zaman bulmak benim için zordur.				
12- İstediğim şeyi elde etmek için bir ihtimal görürsem, hemen harekete geçerim.				
13- Birisinin bana kızgın olduğunu bildiğimde veya düşündüğümde, oldukça endişelenirim veya üzülürüm.				
14- İstediğim bir şey için bir fırsat yakaladığımda hemen heyecanlanırım.				
15- Çoğu zaman düşünmeden o an aklıma eseni yaparım.				
16- Eğer hoş olmayan bir şeyin olacağını düşünürsem, genellikle oldukça "gerilirim".				
17- Çoğu zaman insanların neden öyle davrandıklarını merak ederim.				
18- Başıma iyi şeylerin gelmesi, beni çok olumlu etkiler.				
19- Önemli bir şeyi kötü yaptığımı düşündüğümde endişelenirim.				
20- Heyecan ve yeni duygular yaşamayı çok isterim.				
21- Bir şeyi elde etmeye çalıştığım zaman "kural tanımam".				
22- Arkadaşlarıma kıyasla çok az korkum vardır.				
23- Bir yarışmayı kazanmak beni heyecanlandırırdı.				
24- Hata yapmaktan endişelenirim.				

Appendix F: Patient Health Questionnaire-9

Hasta Sağlığı Anketi -9

Son bir hafta içinde aşağıdaki problemler size ne sıklıkla rahatsız etti?

		Hiç	Birkaç gün	Günlerin yarısından fazlasında	Hemen hemen her gün
1	Bir şey yapmak konusunda ilgisizlik veya zevk almamak				
2	Üzgün, depresif veya umutsuz hissetmek				
3	Uykuya dalmada veya uyumaya devam etmekte zorluk veya çok fazla uyumak				
4	Yorgun hissetmek veya enerjinizin az olması				
5	İştahsızlık veya çok fazla yemek				
6	Kendinizi kötü hissetmeniz- veya kendinizi başarısız ya da kendinizi veya ailenizi hayal kırıklığına uğrattığınızı düşünmeniz.				
7	Gazete okumak veya televizyon seyretmek gibi faaliyetlerde dikkatinizi toparlamakta güçlük çekmeniz				
8	Başkalarının fark edeceği kadar yavaş hareket etmeniz veya konuşmanız. Veya tam aksine- normalden çok daha fazla hareket edecek kadar kıpır kıpır ve huzursuz olmanız.				
9	Ölmüş olsanız daha iyi olacağınız veya bir şekilde kendinize zarar verme düşünceleri				

Appendix G: Generalized Anxiety Disorder-7

Yaygın Anksiyete Bozukluğu-7

Son bir hafta içinde aşağıdaki problemler size ne sıklıkla rahatsız etti?

		Hiç	Birkaç gün	Günlerin yarısından fazlasında	Hemen hemen her gün
1	Kendini sinirli, kaygılı veya çok gergin hissetme				
2	Kaygılarını durduramama veya kontrol edememe				
3	Farklı şeylerden çok fazla endişelenme				
4	Gevşemede güçlük çekme				
5	Sakince oturamayacak kadar kendini huzursuz hissetme				
6	Kolayca kızma ve asabileşme				
7	Sanki çok kötü bir şey olacakmış gibi koru duyma				

Herhangi bir problem işaretlediyseniz, bu problemler sizin için şunları ne kadar zorlaştırdı: İşinizi yapmak, evdeki işleri yapmak veya başkalarıyla geçinmek

Hiç	**Biraz**	**Çok**	**Aşırı Derece**