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PROGRAM**

**MASTER THESIS**

**THE TURKISH TRANSLATION, RELIABILITY  
AND VALIDITY STUDY OF ENRIGHT  
FORGIVENESS INVENTORY**

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The Turkish Translation, Reliability And Validity Study Of Enright Forgiveness

Inventory

Prepared by : Sözen İnak

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## ÖZET

### **Enright Affetme Envanterinin Türkçeye Çevirisi, Güvenirlik ve Geçerlik Çalışması**

**Hazırlayan: Sözen İnak**

**Haziran, 2010**

Bu çalışmada Enright Affetme Envanterinin (EAE) Türkçe'ye çevirisi, güvenilirlik ve geçerlilik çalışmasının yapılması amaçlanmıştır. EAE, bireyin kendisini derinden ve haksızca üzen bir kişiyi ne derece affettiğini ölçmek için klinisyenlerin kolaylıkla kullanabilecekleri bir ölçüm aracıdır.

EAE ilk olarak iki uzman tarafından Türkçe'ye ardından da İngilizceye geri çevirisi yapılarak kontrol edilmiştir. Çalışmaya yaş ortalamaları  $21.12 \pm 2.23$  olan Yakın Doğu Üniversitesi'nin farklı bölümlerinden rastgele seçilen 349 öğrenci katılmıştır. Katılımcılar sırasıyla Kişisel Bilgi Formu, EAE, Beck Depresyon Envanteri (BDE), PRP sosyal kabul Altölçeği uygulanmıştır.

EAE'nin güvenilirlik çalışması için iç tutarlılık katsayısı ve test yarılama güvenilirlik katsayısı tespit edilmiştir. Geçerlilik çalışması için de ölçüt bağıntılı geçerlik ve yapı geçerliği analizi yapılmıştır.

EAE'nin iç tutarlılık katsayısı 0.78 olarak tespit edilmiştir. Madde-toplam puan korelasyonları  $-0.110$ - $0.568$  arasında değişmektedir. Test yarılama güvenilirlik katsayısı 0.78 olarak tespit edilmiştir. EAE maddelerinin, özdeğerleri en az 1 olan 10 faktörde toplandıkları tespit edilmiştir.

EAE'nin konverjen geçerliliği 1-madde Affetme envanteri ile değerlendirilmiştir. EAE ile 1-madde affetme envanteri arasında istatistiksel olarak oldukça anlamlı ilişki olduğu tespit edilmiştir ( $r=0.333$ ). EAE'nin ayırt edici geçerliliği BDE ve SKÖ ile değerlendirildiğinde EAE ve BDE arasındaki Pearson korelasyon katsayısı  $r=0.14$ , EAE ve SKÖ arasında ise  $r=0.15$  olarak tespit edilmiştir.

Yapılan çalışma sonucunda, EAE'nin Türkçe formunun tüm altölçeklerinin de ayrı ayrı güvenilir ve geçerli olduğu tespit edilmiş, Türk toplumunda kullanılabileceği sonucuna varılmıştır.

**Anahtar Kelimeler: Affetme, Enright Affetme Envanteri , Geçerlilik, Güvenirlik**

## **ABSTRACT**

### **The Turkish Translation, Reliability And Validity Study of Enright Forgiveness Inventory**

**Prepared by Sözen İnak**

**June, 2010**

The aim of the study is to translate Enright Forgiveness Inventory and do the reliability and validity studies. EFI is to measure the forgiveness degree of the person who is unfairly and deeply hurt by other person.

Firstly, EFI translated into Turkish and for controlling the Turkish translation, back translation to english made by two expert. 349 student participate from Near East University, Department of law, department of English language teaching, department of International Relations, teaching in Sports and Physical Education, department of Pre-school Teaching, department of prosthetic dental treatment to this study who is mean age  $21.12 \pm 2.23$ . Personal Information Form, Enright Forgiveness Inventory, Beck Depression Inventory, Social Desirability Scale was applied to the students.

For Reliability study of EFI, internal consistency coefficient and Split- halves reliability coefficient were computed. For validity study, criterion related validity and construct validity were studied.

The internal consistency of EFI is 0.78. Item to item-total correlations ranged between  $-0.110$ - $0.568$ . Split Halves reliability coefficient is 0.78. In the criterion related validity study of all subscales of EFI Cronbach alpha coefficients were found to be statistically significant. In the factor analysis of Turkish translation EFI 10 factors with eigenvalues equal or greater than 1 were found.

1-Item Forgiveness Scale was used for examining the convergent validity of EFI. A statistically significant relationship was found between EFI and 1-Item Forgiveness scale ( $r=0.333$ ). In discriminant validity analysis of EFI, the Pearson correlation coefficient between the EFI and BDI is  $r=0.14$  and  $r=0.15$  between EFI and SDS.

According to these results the Turkish form of EFI is reliable and valid inventory. It can be used in Turkish Society.

**Keywords: Forgiveness, Enright Forgiveness Inventory, Reliability, Validity**

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## **ABBREVIATIONS**

**EFI:** Enright Forgiveness Inventory

**EFI NA:** Enright Forgiveness Inventory Negative Affect Subscale

**EFI PA:** Enright Forgiveness Inventory Positive Affect Subscale

**EFI NB:** Enright Forgiveness Inventory Negative Behavior Subscale

**EFI PB:** Enright Forgiveness Inventory Positive Behavior Subscale

**EFI NC:** Enright Forgiveness Inventory Negative Cognition Subscale

**EFI PC:** Enright Forgiveness Inventory Positive Cognition Subscale

**BDI:** Beck Depression Inventory

**PRP:** Personal Relationship Profile

**SDS:** Social Desirability Scale

**TRNC:** Turkish Republic of Northern Cyprus

**TR:** Turkey

## INTRODUCTION

The concept of Forgiveness has been used most widely in 1980s by the Enright in the area of social psychology (McCullough, Pargament, Thoresan,1999). Before Enright and colleagues, some psychologist and mental health professionals like Piaget (1932), Behn(1932), Litwinski (1945) discussed the forgiveness concept underlying the human phenomenon but didn't spent serious time to forgiveness (cited in McCullough, Pargament, Thoresan,1999). And more and more earlier forgiveness concept was used by the Christian religion(McCullough, Pargament, Thoresan,1999). For example, in Christianity when people believe that they made a sin they went to church and ask for foregiveness with the confession.

In the literature there are many different definitions of forgiveness. Enright and Human Development Study Group (1991), define forgiveness as a “willingness to abandon one's right to resentment, negative judgement, and indifferent behavior toward one who unjustly injured us, while fostering the undeserved qualities of compassion, generosity and even love toward him or her.” (enright and Human Development Study Group, 1991). Studzinski (1986), defines forgiveness as a willfull process in which the forgiver chooses not to retaliate but rather respond to the offender in a loving way. Worthington and Wade (2005), explain forgiveness as a process that promote decrease in unforgiveness and advanced in positive regard against offender.

Forgiveness is important to make relationships more warm and as a result resolve the conflicts between partners.. Forgiveness plays important role to improve relationships which it harmed through meaningfull transgression and also improve mental and physical health, marital satisfaction and stability (Harris, Thoresan, 2005). According to McCullough, Worthington, & Rachal (1997), forgiveness contains encouragement to cope with the suspicions and restructure concordence to the relationship.

Enright scholarly focus on forgiveness in mid-1980s and develop a reliable social development test, Enright Forgiveness Inventory (Hill, 2007). EFI was developed by Enright for the reason that measuring the forgiveness level of people. It has 60-items and three subscales. Each subscale has 20 items based on three dimensions of forgiveness that are cognition, behavior and affect. High scores implies high forgiveness. (Enright, Rique, 2009)

Enright Forgiveness Inventory was translated to many languages in countries like Brazil, Dutch, Austria ... and performed the reliability & validity studies. (Enright, Rique, 2009) The studies of reliability and validity shows that EFI was strongly significant and unidimensional structure of the nature (Orathinkal, Vansteewegen, Enright, Stroobants, 2007). subkoviak, et. Al. (1992), reported that Cronbach's Alpha for the EFI was .98.

### **1.1. WHAT IS FORGIVENESS?**

In the mid-1980s Enright began to work on psychological pathway of individuals forgiving process (Hill, 2007). Enright and Human Development Study Group (1991), define forgiveness as a “willingness to abandon one's right to resentment, negative judgement, and indifferent behavior toward one who unjustly injured us, while fostering the undeserved qualities of compassion, generosity and even love toward him or her.”(Enright, Freedman, Rique, 1998). Further, Enright described forgiveness as a “voluntarily gift of mercy from someone who has been offended”(Hill, 2007). Forgiveness provides decrease in negative thoughts, feelings and behaviour and increase the positive thoughts, feelings and behaviors toward the offender (Hill, 2007). According to McCullough (2000), social interactions sometimes reveals transgression and inevitable injuries and forgiveness provides continuity of interpersonal relations through restoring these states. Additionally, McCullough (2000) suggest forgiving increase concordance of relationship.

According to Coyle, forgiveness is a bridge between our rights and our own and other's moral faults.

McCullough (2000) emphasize that his opinions based on two conceptual points about forgiveness that "forgiving is motivational construct and forgiving is prosocial". When person forgive the other after the transgression, forgiveness leads to prosocial changes in person's experiences and when person forgive, they will change (cited in Simic, 2007). McCullough advanced that, relational events which arising from interpersonal interaction and person's reaction to offenses managed by two motivational systems and two affective states which it correspond to this two motivational systems. That is, "feeling of hurt perceived attack" (McCullough, 2000) correspond to motivation to avoid contact with the offender and "feelings of righteous indignation" (McCullough, 2000) correspond to motivation to search revenge or hope to comes bad things to offenders (McCullough, 2000). If the person forgive the offender, his/her perception about events will change and will not generate new motivation to avoid offender or person will not try to take revenge (McCullough, 2000). McCullough's prosocial psychological phenomena, includes "willingness to sacrifice" and "accommodation". Accommodation inhibite the destructive responses that are exist in interpersonal relationships and promoting constructive responses. Willingness to sacrifice can explain with, tendency to renounce the self-interest for increase the well-being of partner or relation. Ability to forgive is important to achieve the continuity of relationship (McCullough, 2000). After the relational transgression, forgiveness appears to restore the damaged closeness and combine with the capacity to efficiently resolve relationship disagreement (Finchman, 2009). Forgiving is effectively repair the social relation which is damaged by the perceived interpersonal transgression. This outcome contains coworker relationships. (McCullough et. Al., 1998).

In the research of Hodgson and Wertheim (2007), found that if the person able to regulate or repair their emotions and make sure that their emotions, they give high scores about the forgive others and self-forgiveness. Additionally they advanced

that, tendency to forgive is combine with two type of empathy: “greater perspective taking” and “ lesser tendency to become personally distress about others’ difficulties” (Hodgson ,Wertheim ,2007)

Worthington’s opinions about forgiveness is forgiveness as a motivation to diminish the avoidance from an offender and negative states like anger, feeling of revenge or retaliate.

According to McCullough (2001) opinions agreeableness means that a disposition to kindness and pro-sociality that agreeable persons are tendency to establish empathy to transgressor. They shows tendency to perceive transgression as less deliberate and less intense than less agreeable persons. Also McCullough (2001) suggest that emotionally stable persons are people who has emotional stability they find easier to forgive the transgressors.

Worthington and Scherer (revised, 2003) suggests two type of forgiveness 1) Decisional, 2) Emotional. Emotional forgiveness, is based on individual and also emotional experiences. Decisional forgiveness is a behavioral intention to seek revenge with to behave like transgressor and his/her transgression. In Decisional forgiveness person focus toward angry, anxious, seek revenge and avoidance. (Worthington, Sherer, 2004 )

## **1.2. FORGIVENESS AND RELATED CONCEPTS**

Enright and Coyle defined two different forgiveness type, one of genuine forgiveness other is pseudo forgiveness. Genuine forgiveness describe with 3 focuses as,



offended person able to define actual injustice, willingly respond with mercy, related with well-being of human interaction (Worthington, 1997). Pseudo forgiveness defined as “form of denial or condonation (Hunter,1978, Augsburger, 1981 -cited in manual of EFi). Denial implies greater injury and condonation implies he/she suffered from injury (Hunter,1978, Augsburger, 1981 -cited in manual of EFi).

McCullough advanced that person’s ability to forgiving may effect some variables like empathy, perspective-taking, rumination, suppression, closeness, commitment, satisfaction and apology (McCullough, 2000). Also Enright and Coyle (1997) mentions that some concept which person may assume it is forgiveness.

### **Empathy**

Empathy is the conciliators of forgiving others and mediated changes in person forgiveness levels. One of the research emphasize immediate impact of empathy to forgiving others more stronger for husband than wife. According to this study mens displays less emphatic behavior than women but if they are emphatic it can provides high effect on relationship functioning which it includes willingness to forgive partner. (Toussaint and Webb,2005)

One of the study emphasize that positive relationship quality predict causal and liability ascriptions these are increase forgiveness through affective responses and emotional empathy (Fincham, Paleari, Regalia, 2002)

Existence of unresolved conflicts prevents empathy and willingness to accommodate, caused to decline in whole aspects of forgiveness. The same, continued unresolved conflicts led to fail determine to feel commitment, feeding back to reduces the level of good faith and increase the level of retaliation and avoidance (Fincham, Beach, Davila, 2007)

**Accommodation:** It mentions that providing to behave constructive manner instead of to acts in same way to the partners who acts in a destructive behavior. (Finchman, 2009).

**Pardoning :** If the legal penalties applies to offender victim may assume the justice took place in inner world. They may entitled this as forgiving offender.( Enright and Coyle,1997)

**Condoning:** Victims think that offender has a right what to do against him/her. (Enright and Coyle ,1997)

**Excusing:** Victims believe offender has a true point to defend him/herself what to do against to ownself. (Enright and Coyle, 1997)

**Forgetting:** Forgetting may a dangerous way. Person avoids own injuries in that way and think that to forgive the offender. (Enright and Coyle ,1997)

**Denying :** It includes avoiding to confronting with pain.( Enright and Coyle, 1997)

**Perspective-taking:** Is the most important component of empathy. Its lead to take consider of the offender viewpoints into the offence and it exist to facilitate the success of the victim in forgiving the offender.(Hodgson, Wertheim, 2007)

**Rumination and Suppression:** ruminate the offense and try to suppress this ruminations caused to increase the severity of avoidance or desire to revenge. As opposed decrease in rumination and suppression facilitate the forgiving. (McCullough, 2000)

**Closeness, Commitment, Satisfaction:** there are many research about this concept like marital satisfaction (McCullough, 2000). Forgiveness is positive related with the able to efficiently solves relationship conflict. Forgiveness appears to restore the injured commitment and closeness after the transgression. Forgiveness-commitment

relations managed by commitment. Due to this, more committed parts of the relationship may have high motivation to forgive partners for to stay in relationship. Some longitudinal researches indicate forgiveness raises commitment and if combined with forgiveness provides decreased retaliation and avoidance or redound benevolence to partners. One study found that, one of the parts forgiveness predicts other one's forgiveness for in later time. Relationship satisfaction influences from viewpoint differences of offended and offender's to the transgression (Finchman, 2009).

Forgiveness exist that the core elements in marriage. In the lack of forgiveness, shows decrease in desire to solve marital problems and increasing the destructive interactions. (uncompleted articles, Carla S. Ross, 2009). Finchman (2000) forgiveness and marital satisfaction are connected and only th forgiveness evaluation in this study, forgiveness intercede the relationship between the partners' liability ascription and reported acts. McCullough, Rachal, Sandage, Worthington, Brown and Hight (1998) found that the negative relationship between commitment and satisfaction with reported avoidance and revenge after the recent hurt and the damage of harmful relationship which describe by persons in a relation. Also according to one research findings, positive relationship found between marital satisfaction and forgiveness (16-orathinkal, Vansteenwegen, 2006).

**Apology:** intimate apologies and statements of remorse are stronger factors of offender to controlling the offended forgiving (McCullough, 2000).

### **1.3. FORGIVENESS AND RECONCILIATION**

Forgiveness might be raises possibility of forgiveness but forgiveness is not mean that reconciliation (Finchman,2009). Forgiveness is not need to reconciliation. They

are related but separate processes (Worthington, 1997). Forgiveness can reveal reconciliation spontaneously while restoring the trust. Forgiveness occurs within the individual. Reconciliation occurs between two persons and it is “dyadic process” (Finchman, 2009). Reconciliation repairs relationships between individuals. It contains repairing of damaged trust and it needs benevolence of partners. (Finchman, 2009).

Schema 1: Forgiveness & Reconciliation

		<i>RECONCILIATION</i>	
		<i>NO</i>	<i>YES</i>
<i>FORGIVENESS</i>	<i>NO</i>	<i>Neither forgiveness nor reconciliation</i>	<i>Reconciliation without forgiveness</i>
	<i>YES</i>	<i>Forgiveness without reconciliation</i>	<i>Reconciliation and forgiveness</i>

Note: This scheme quoted from Worthington (1997).

Reconciliation can arise without forgiveness. (Finchman, 2009). Both forgiveness and Reconciliation can be learned to use in the process of healing (Coyle, 2003). Reconciliation is defined as “The restoration of peaceful or amicable relations between two individuals who were previously in conflict with one another” in the online encyclopedia of the Free Dictionary. Enright (2001) defines reconciliation as “the act of two people coming together following separation”. Coyle (2003) defines that, “forgiveness is an internal response of one individual to another while reconciliation implies that two people, both the injured and the offender, choose to engage in some sort of relationship”. In this statement mentions that, both of the parties- both victim and offender- willingly choose to make desirable of their relationships. Although, Sometimes, victims are not willing to change acts to make the relationship more desirable (Coyle, 2003). According to Coyle (2003), both forgiveness and reconciliation not necessary to heal. In this view, forgiveness can result with healing even without reconciliation (Coyle, 2003).

Waal and Pokorny (2005) defines forgiveness as “ friendly reunion between former opponents: The reunion supposedly serves to return the relationship to normal levels of tolerance and cooperation”

#### **1.4. GENDER DIFFERENCES IN FORGIVENESS**

In the study of Toussaint and Webb (2005), which made with 127 people in California, they used EFI and The Balanced Emotinal Empathy Scale for comparing the Forgiveness and Empathy. They founds that women are more empathic but equal with men in forgiveness (Toussaint, Webb, 2005).

In the study of Orathinkal, Vansteenwegen and Burggraeve (2008), compared the demographic variables and forgiveness which made with 735 participants and use EFI and demografic Questionnaire. They found that women are more forgiver than men (Orathinkal, Vansteenwegen and Burggraeve, 2008).

According to longitudinal studies of Paleari, Regalia, Finchman (2005), which made with married couples they found that ruminative thoughts and feelings are more strong between wives than husbands but empathic feelings that are related with benevolence is stronger for husbands than wives (Paleari, Regalia, Finchman, 2005)

In the results of the other research, emotional empathy found best predictor of forgiveness in husbands, cognitive factors like attributions to marital offense, found over predictive of forgiveness in wives (Fincham et al., 2002).

## **1.5. FORGIVENESS AND RELIGIOSITY**

The history of forgiveness is related to religion. In the religious books mentions the forgiveness such as Bible, Quran. Because of this, the relationship between forgiveness and religion was investigated. In the study of Orathinkal and Vansteenwegen (2007), significantly high positive relationship found between religion and forgiveness.

Levenson, Aldwin and Yancura (2006) found in their research that pickup in spiritual experiences and forgiveness intercede the decline in depressive symptoms.

## **1.6. FORGIVENESS AND HEALTH**

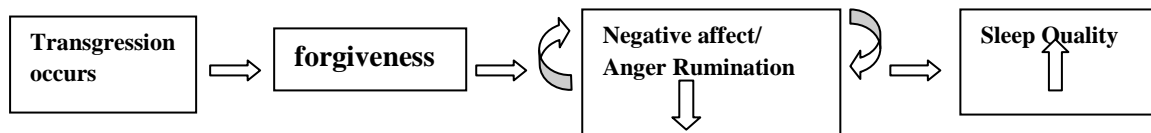
Forgiveness provides both physical and mental healths of persons. Unforgiving persons becomes more aggressive according to empirical findings. In this section we try to explain these separately.

**Mental health:** Bono, McCullough and Root (2007) suggest that the stronger relationship were between forgiveness and well-being which it characterized with two properties: a) “greater closeness and commitment to the relationship (at least from the victim’s perspective) b) a high degree of apology and making amends from the transgressor following the transgression”. In ability to achieve forgiving an apologetic partner more negatively related with well-being than inability to achieve forgiving the unapologetic one. Additionally they found that well-being was links with raises in forgiveness.

In the thesis of Snook (2005), indicates that unforgiven persons had more anger and resentment to others who are the experimenter in study than forgiver. Also unforgiven person reflects experimenters less friendly, unprofessional, less likeable and less polite.

If person concentrated attention to the past life experience (e.g. past transgression) with the motivation of ongoing hostility to offender this led to increased anxiety. And anxiety decrease the level of forgiveness (Caraballo, Rye, Pan, Kirshman, Zois, Lyons, 2008). Also if the transgression appears while the relationship continue, anxiety turns the frame of the relationship's future this may alleviate by forgiveness(Caraballo, Rye, Pan, Kirshman, Zois, Lyons, 2008). Caraballo, Rye, Pan, Kirshman, Zois, Lyons (2008), suggest that two pathways about their hypothesis which it confirmed through this research, 1) forgiveness links with decreased negative affect this caused to heal sleep quality 2) forgiveness links with decreased negative affect and decrease anger rumination in order cause to heal sleep quality. They develop a shema about this proven assumptions.

**Shema 2.** A theoritical model of how Anger Rumination and Negative Affect mediate the relationship between Forgiveness and Sleep Quality



**Note:** this shema quoted from Caraballo, Rye, Pan, Kirshman, Zois, Lyons articles.

**Physical Health:** In the first study to examine the effect of forgiveness on cardiac functioning made by Waltman, Russell, Coyle, Enright, Holter and Swoboda in 2009. In this experimental study were significantly changes in left ventricular myocardial perfussion defect among the experimental group and control group. Namely “the mycaordial perfussion defect parameter was change in, or the development of, a new myocardial perfussion defect following the anger-recall test, representing a mental stres induced reduction in myocardial blood flow, preassumbly by coronary vasoconstriction”.

## **1.7. THE HISTORY OF FORGIVENESS**

They divided history of forgiveness into two part; 1) 1932 -1980 and 2) 1980 – Present. (this part cited in McCullough, Pargament, Thoresen, 1999)

**1) 1932-1980:** The concept of forgiveness drew attention of pastoral care counselors and than they begin to study on this human phenomenon. Some researchers like Piaget (1932), Behn (1932), Litwinski (1945), they discussed on grew capacity of moral judgements to forgive ad interpersonal forgiving (cited in McCullough, Pargament, Thoresen, 1999). Some of the researchers studied on the relationship between forgiveness and well-being.

**2) 1980- Present:** Forgiveness concept gained popularity after the 1980s. Researchers began to investigate social psychological causes underlying the forgiveness research.

In 1990s emprical research about the strategies which encouraging to forgive in counselling and pychotherapy began to arise in journals. The frequency of the use of forgiveness in the interventions are increase after this term.

## **1.8. INTERVENTION MODELS OF FORGIVENESS**

### **1.8.1. The Process Model Of Forgiveness**

Enright and Human Development group developed an intervention model to promote forgiveness as “Process Model of Interpersonal Forgiveness”. The model has 4 phases and 20 units. 1- Uncovering Phase , 2-decision phase, 3- work phase, 4- deepining phase.

***Uncovering Phase:*** trying to arouse persons awareness to own inner emotions like anger about the unjust injury. Psychological defenses, shame, cognitive rehearsal and



lack of energy are investigated. The effect of the injury is pick out and confirmed. So, choice of forgiveness becomes more probable.

**Decision Phase:** If people do not choose the forgiveness until this time, the effect of damage may be still or in the other way positive consequences of forgiving. In this process person has “change of heart” and chooses the forgiveness to heal. Person should work hard to forgive over time.

**Work Phase:** In this phase person still suffering from unjust injury, restructuring the wrongdoer in own mind, decide to offer the best intentions to him/her. This set a framework for empathy and good intentions of forgiveness. While established the frame of trust and safety between the victim and offender may be offered the mercy.

**Deepening Phase:** Until this phase person may obtain emotional relaxation for forgiving the offender. Due to this, it's time to find meaning of suffering. By choosing the virtue of forgiveness as a response, victim remarkable contribute to own personal growth.

**Table 1. Process Model of Interpersonal Forgiveness**

<b>Units</b>	
	<b><u>Uncovering Phase</u></b>
1.	Examination of Psychological Defenses (Kiel, 1986).
2.	Confrontation of anger; the point is to release, not harbor, the anger (Tranier, 1981).
3.	Admittance of shame, when this is appropriate (Patton, 1985).
4.	Awareness of cathexis (Droll, 1984).
5.	Awareness of cognitive rehearsal of the offense (Droll, 1984)
6.	Insight that the injured party may be comparing self with the injurer (Kiel, 1986)
7.	Realization that oneself may be permanently and adversely changed by the injury (Close, 1970)
8.	Insight into a possibly altered "just world" view (Flanigan, 1987)
	<b><u>Decision Phase</u></b>
9.	A change of heart, conversion, new insights that old resolution strategies are not working (North, 1987)
10.	Willingness to consider forgiveness as an option.
11.	Commitment to forgive the offender (Neblet, 1974)
	<b><u>Work Phase</u></b>
12.	Reframing, through role-taking, who the wrongdoer is by viewing him/her in context (Smith, 1981)
13.	Empathy toward the offender (Cunningham, 1985)
14.	Compassion toward the offender (Droll, 1984)
15.	Acceptance, absorption of the pain (Bergin, 1988)
	<b><u>Outcome or Deepening Phase</u></b>
16.	Finding meaning for self and others in the suffering and in the forgiveness process (Frankl, 1959)
17.	Realization that self has needed others' forgiveness in the past (Cunningham, 1985)
18.	Insight that one is not alone (universality, support).
19.	Realization that self may have a new purpose in life because of the injury
20.	Awareness of decreased negative affect and, perhaps, increased positive affect, if this begins to emerge, toward the injurer; awareness of internal emotional release (Smedes, 1984)

Note: This table is quoted from EFI users' manual booklet.

### **1.8.2. The Pyramid Model Of Forgiveness**

McCulough and his colleagues have developed an intervention model which based on empathy to promote forgiveness but, differs from Empathy based forgiveness model (Worthington, 1997). It's name is Pyramid model of Forgiveness. This model focuses on fear-based secondary emotions which exist behind the offence to understand forgiveness, because, fear is motivate to revenge and avoidance. (Worthington, 1997). pyramid model can formulazed with acrostic REACH:

**R**ecall the hurt  
**E**mphasize with one who hurt you  
**A**ltruistic gift of forgiveness  
**C**ommitment to forgive  
**H**old onto forgiveness

#### ***Step 1. Recall the hurt***

*The Mechanics of Fear Conditioning:* It's based on fear conditioning like a rat in a cage. Person who hurt someone he/she live classical conditioning sense in a fear conditioned manner. It regards to unforgiving person. The person takes from an injustice, offence, or hurt by an offender, this is unconditioned stimulus. Offender is a conditioned stimulus. If the unforgiving persons sees the offender in another time he/she firstly live strain, oriented to the injury and freezing. Secondly give a response as a stress. And thirdly, person tried to escape from effender.(fourth) If the person not to opportunity to escape, anger, retaliation, defensive fighting might be occur. (fifth) If this is also not possible, fighting becomes self-destructive, vain and inexpedient. And sometimes it may result with depression.

*Neural Pathways Activated By Fear Conditioning:* One brain pathway is amygdala which mange the emotional conditioned. Appreciable with sense organs sending to thalamus then to amygdala. Thalamus sending a message to sensory cortices to hippocampus. In here signals integrates with more refined picture. This pathway reflected to the prefrontal cortex, after to working memory and decisions are made.

*Some Indirect Preliminary Evidence Of Fear Conditioning:* Avoidance and revenge are similar to fear-response system. If the person hurt by an offender they try to avoid to contact or faced with offender. If the person forced to face wit offender person can retaliate or revenge.

*Resistance of Fear Conditioning to Extinction:* Person who hurts by offender he/she is fear conditioned. The one of the important way to cope wih the fear conditioning is *extinction*. Extinction can changes person's response to unconditioned stimulus without addressing emotional conditioning.

*An objection:* The other hypothesis about unforgiveness is anger-based model. But it is not obvious evidence that anger is the first emotional response than fear.

*Using The Fear Conditioning Model Of Unforgiveness To Promote Forgiveness:* helping people to talk about the event with details in a suppotive and nonhurtful atmosphere. But its important to ensure the person do not reexperience pain deeply. Recaalling the hurt contains extinction and in this step starting to forgiveness with changing the person's response to unconditioned stimulus.

### ***Step 2. Empathize with the one who hurt you***

It is the key step in this model. In this step creating state of empathy against to offender is crucial. They try to lead person to think as offender what he/she think process and feeling like offender to feel their feelings during the process of hurtfull events.

### ***Step 3. Altruistic Gift***

This step contains three experiences as *guilt, gratitude, gift*.

*Guilt:* According to this model "guilt is an experience, that one is capable of inflicting pain, harm or suffering on another." In this step, trying to realize the person

that they can give an harm to another person like offender in the same way with offender.

*Gratitude:* they invite the person to recall gratitude with aloud in the context of given forgiveness which occurs after transgression.

*Gift:* empathy added to guilt and gratitude of humility and occurs the motivational states together. In that point asking to person “do you want to give gift of forgiveness to the offender” if the person ready to do this, proceed to fourth step.

#### ***Step 4. Commitment To Forgive***

They make a commitment exercise with some questions or writing anythings which arouse and supports experiences of forgiveness.

#### ***Step 5. Holding onto forgiveness***

In this step, 6 experiences uses to maintaning the forgiveness. (Worthington, 1997)

## **2. METHOD OF THE STUDY**

### **2.1. The Importance Of The Study**

EFI is an important measurement for clinicians to evaluate the persons forgiveness degree especially who works with couples or anger management. Originally developed in United States of America and this is best of our knowledge this is the first study to determine the psychometric properties of EFI in Turkish Cultures.

### **2.2. Aim Of The Study**

The aim of the study is to translate EFI to Turkish and examine the reliability, validity for the Turkish population.

### **2.3. Translation Of The EFI**

Beginning the translation study of the Enright Forgiveness Inventory, (EFI ), firstly permission from was taken Robert D. Enright who is the author of this scale. Then two experts translate it into turkish, two experts made back translation to English again. After these translation procedure, the final form of scale was formed and applied to the University Students. The original form and translated form of the scale are given at the appendix 1. and 2.

### **2.4. Sample Of The Study**

The sample of this study was created randomly with 349 students of Near East University in Turkish Republic of Northern Cyprus. We require to select our university because of the located in TRNC and we would like to compare both of the

TRNC and Turkey citizenships. We do this procedure to test the validity of the scale both Turkey and TRNC. 167 (47.9%) of this sample were females, 182 (52.1%) were male, 98 (28.1%) students were from TRNC, 236 (67.7%) were from Turkey, 13(3.7%) were from TRNC–Turkey, 2 (0.6%) were from (TRNC-British). All of these participants were Turkish speaking. For this study we randomly select 7 departments from the 82 departments of Near East University and each department we randomly choose one lesson among the courses of the semester. 162 (46.4%) of these participants were grade 1, 68 (19.5%) of these participants were grade 2, 66 (18.9%) of these participants were grade 3, and 53(15.2%) of these participants were grade 4. The age range of these participants in this study was 18 to 38 and the mean age was  $21.12 \pm 2.23$ . The age distribution is given at the table 1.

**TABLE 2: Distribution according to age.**

Age	18	19	20	21	22	23	Older than 24	Total
n	30	43	77	65	65	29	38	349
(%)	(8.6)	(12.3)	(22.1)	(18.6)	(18.6)	(8.3)	(10.9)	(100)

Two missing variable.

## 2.5. Instruments

### 2.5.1 Personal Information Form

Participants were delivered a sociodemographic information form which included data about age, gender, nationality, grade were asked.

### **2.5.2. Enright Forgiveness Inventory (EFI)**

EFI developed by Enright. Firstly 150 – items scale developed by researcher and graduate students in Wisconsin-Madison University. They are aimed to facilitate the use and translation to other language of EFI. Applied to 197 college students and their same gender parents' and after this first administration they determine the excellent 60 items according to scores. Now EFI includes 60- items and three subscales. Each subscale has 20 items which based on three dimensions of forgiveness that are cognition, behavior and affect. (7) Each subscales has 10 positive and 10 negative internal subscales. *Affect subscales* has positive affect (PA), negative affect (NA), *Cognition subscales* has Positive cognition (PC), Negative Cognition (NC), and *behavior subscales* has Positive behavior (PB), Negative behavior (NB) internal subscales. The 60 items are scored on a 6-point Likert scale from strongly disagree to strongly agree. The range of scores is 60 to 360. EFI. High scores implies high forgiveness. (Enright, Rique, 2009)

#### **2.5.2.1. One - Item Forgiveness Scale**

One item Forgiveness Scale was applied to check the construct validity of the Enright Forgiveness Inventory. It has the part of EFI which can use separately. (Enright, Rique, 2009)

### **2.5.3. Beck Depression Inventory (BDI)**

The BDI was developed by Aaron T. Beck in 1961. It's an objective standardized measurement of depression. It has 21 items in multiple choice format which is formed to check the availability and the degree of the depression in adolescent and adults. Each of the items expresses the depressive symptoms and attitudes. In this Inventory obtained scores indicate the severity of depression. High scores mean



severe depression. Severity categories are formed from with standardized scores. The reliability coefficient were above .90. internal consistency studies revealed a correlation coefficient of .86. the Spearman – Brown correlation for the reliability of the BDI was .93. BDI was translated into Turkish by Buket Tegin in 1980 and by Nesrin Hisli in 1989. The Alpha coefficient was .80 and split halves reliability Alpha coefficient was .74. (Barbera, 2003, Öztürk, 1994)

#### **2.5.4 Social Desirability Scale (SDS)**

The scale was the short form of the Marlowe Crown SDS which was adapted by Reynolds in 1982. The scale measures the person's tendency to behave socially desirable manner. The scale consist of 13 items. It used as subscale in Personal and Relationship profile (PRP) which constructed by Murray Straus. PRP is intended for clinical screening and research on family violence. It has 23 scales and one of these were social desirability scale which adapted to turkish by Zihniye Okray Kocabıyık in 2005. The Alpha Coefficient of this scale was .64. (Kocabıyık, 2005)

#### **2.6. Data Collection**

The participant were administered a battery of scales in addition to a sociodemographic information form. The study was presented to participants as a research conducted for bachelor's degree students. Ethical concerns were regarded and anonymity was assured both verbally and in a written form. The participants were told that they could omit the items they do not want to answer.

## **2.7.Data Analysis**

Data analysis was made with SPSS 16. Validity was evaluated with criterion related scales. The scales elected between the previously adapted Turkish scales. The Cronbach Alpha coefficient was evaluated with Enright Forgiveness Inventory and criterion related scales.

The reliability study of the EFI was evaluated with Internal Consistency and Split-Halves method. The relationship between the scores of each item and item total scores of the subscales was evaluated with Pearson Correlation and Cronbach Alpha's was found. With the split halves method each scales and subscales was divide into two parts according to double and single numbers and the total scores are evaluated with Spearman- Brown correlation coefficient.

### **3. RESULTS**

#### **3.1 RELIABILITY STUDY**

##### **3.1.1. INTERNAL CONSISTENCY OF THE SCALE**

Enright Forgiveness Inventory (EFI) consists of 60 items and for evaluating the internal consistency of the scale Cronbach Alpha Coefficient was calculated. After the statistical analyzes internal consistency of the scale was found as  $\alpha$ : .78. The scale was found reliable scale.

##### **3.1.2. ITEM-ITEM TOTAL ANALYSIS**

In our research correlations of item to item total score of each subscale was investigated. The correlations of item to item total scores are given in different tables for 3 of the subscales and for positive and negative dimensions of each subscale.

**Table 3. The Pearson Correlation Coefficient And Significance Levels Between Item to Item-Total Scores Of The Turkish Form of EFI**

<b>Item</b>	<b>r</b>	<b>p</b>
1	0.545	0.000**
2	0.070	0.282
3	0.511	0.000**
4	0.476	0.000**
5	0.128	0.048*
6	0.463	0.000**
7	0.533	0.000**
8	0.100	0.123
9	0.249	0.000**
10	0.204	0.002**
11	0.495	0.000**
12	0.169	0.009**
13	0.076	0.241
14	0.047	0.473
15	0.512	0.000**
16	0.241	0.000**
17	0.547	0.000**
18	0.534	0.000**
19	0.384	0.000**
20	0.086	0.187
21	0.444	0.000**
22	0.006	0.931
23	0.016	0.806
24	0.029	0.658
25	0.532	0.000**
26	0.007	0.910
27	0.466	0.000**
28	0.469	0.000**
29	-0.032	0.627
30	0.486	0.000**
31	0.120	0.064
32	0.528	0.000**
33	0.000	0.995
34	-0.052	0.424
35	0.522	0.000**
36	0.082	0.205
37	0.503	0.000**
38	0.568	0.000**

39	0.180	0.005**
40	0.453	0.000**
41	0.120	0.064
42	0.006	0.928
43	0.025	0.699
44	0.416	0.000**
45	0.405	0.000**
46	-0.060	0.351
47	0.440	0.000**
48	-0.110	0.090
49	-0.055	0.396
50	0.418	0.000**
51	0.471	0.000**
52	0.053	0.413
53	-0.091	0.159
54	0.388	0.000**
55	-0.061	0.347
56	0.495	0.000**
57	0.364	0.000**
58	0.007	0.915
59	0.473	0.000**
60	0.388	0.000**

\*P< 0.01

The item to item-total scores correlation for Affect Subscale is between -0.110-0.568. The correlation coefficients for item to item-total score are significant. The internal consistency of the subscale was found as .79. Although some items have low correlations this is due to the properties and concepts of items. In EFI t subscale there are two scales that measures negative and positive dimensions. The low correlated items are belong to negative subscales. In below give tables the Negative questions and positive questions are evaluated with the related total scores and the correlations are given.

**Table 4. The Pearson Correlation Coefficient And Significance Levels Between Item to Item-Total Scores Of The Turkish Form of EFI Affect Subscale**

<b>İtem</b>	<b>r</b>	<b>p</b>
1	0.521	0.000**
2	0,043	0.465
3	0.457	0.000**
4	0.492	0.000**
5	0,054	0.360
6	0.457	0.000**
7	0.527	0.000**
8	0.177	0.002**
9	0.341	0.000**
10	0.369	0.000**
11	0.487	0.000**
12	0.373	0.000**
13	0.197	0.001**
14	0.189	0.001**
15	0.576	0.000**
16	0.307	0.000**
17	0.488	0.000**
18	0.511	0.000**
19	0.362	0.000**
20	0.041	0.482

\*\*p<0.01

\*p<0.05

The item to item-total scores correlation for Affect Subscale is between 0.041 and .576. The Pearson correlation coefficients for item to item-total score are significant. The internal consistency of the subscale was found as 0.68. Although some items have low correlations this is due to the properties and concepts of items. In EFI Affect subscale there are two scales that measures negative and positive affect. The low correlated items are belong to negative affect scale. In below give tables the Negative Affect questions and positive Affect questions are evaluated with the related total scores and the correlations are given.

**Table 5. The Pearson Correlation Coefficient And Significance Levels Between Item to Item-Total Score Of The Turkish Form of EFI Negative Affect Subscale**

<b>İtem</b>	<b>r</b>	<b>p</b>
2	0.635	0.000**
5	0.612	0.000**
8	0.696	0.000**
9	0.523	0.000**
10	0.650	0.000**
12	0.691	0.000**
13	0.703	0.000**
14	0.742	0.000**
16	0.562	0.000**
20	0.690	0.000**

\*\*p<0.01

The item to item-total correlation for EFI Negative Affect Subscales are between .52 and .74. The correlation coefficients between item to item-total scores are significant. There is highly significant relationship ( $p<0.01$ ) between all negative items.

**Table 6. The Pearson Correlation Coefficients And Significance Levels Between Item to Item-Total Score Of The Turkish Form of EFI Positive Affect Subscale**

<b>İtem</b>	<b>r</b>	<b>p</b>
1	0.827	0.000**
3	0.800	0.000**
4	0.766	0.000**
6	0.797	0.000**
7	0.846	0.000**
11	0.809	0.000**
15	0.676	0.000**
17	0.845	0.000**
18	0.794	0.000**
19	0.632	0.000**

\*\*P<0.01

The item to item-total correlation for EFI Positive Affect Subscales are between .63 and .85. The correlation coefficients between item to item-total scores are significant. There is highly significant relationship ( $p<0.01$ ) between all positive items.



**Table 7. The Pearson Correlation Coefficients And Significance Levels Between Item to Item-Total Score Of The Turkish Form of EFI Behavior Subscale**

<b>İtem</b>	<b>r</b>	<b>p</b>
21	0.411	0.000**
22	0.136	0.018*
23	0.098	0.088
24	0.158	0.006**
25	0.519	0.000**
26	0.075	0.192
27	0.460	0.000**
28	0.466	0.000**
29	0.096	0.097
30	0.450	0.000**
31	0.157	0.006**
32	0.566	0.000**
33	0.112	0.051
34	0.119	0.038*
35	0.480	0.000**
36	0.153	0.008*
37	0.540	0.000**
38	0.572	0.000**
39	0.279	0.000**
40	0.428	0.000**

\*\*p<0.01

\*p<0.05

The item to item-total scores correlations for Behavior Subscale are between .075 and .57. The correlation coefficients between item to item-total score are significant. For all items except for item 23, 26 and 29. The internal consistency of the subscale is found as .66. Although some items have low correlations this is due to the properties and concepts of items. In EFI Behavior Subscale there are two scales that measures negative and positive behavior. The low correlated items belong to negative behavior scale. The Negative Behavior questions and positive Behavior questions are evaluated with the related total scores and the correlations are given.

**Table 8. The Pearson Correlation Coefficients And Significance Levels Between Item to Item-Total Score Of The Turkish Form of EFI positive Behavior Subscale**

<b>İtem</b>	<b>r</b>	<b>p</b>
21	0.755	0.000**
25	0.818	0.000**
27	0.743	0.000**
28	0.793	0.000**
30	0.758	0.000**
32	0.842	0.000**
35	0.808	0.000**
37	0.835	0.000**
38	0.832	0.000**
40	0.743	0.000**

\*p<0.01

The item-item total correlation for EFI Positive Behavior Subscales are between .74 and .84. The correlation coefficients between item to item-total scores are significant. There is highly significant relationship ( $p<0.01$ ) between all positive items.

**Table 9. The Pearson Correlation Coefficients And Significance Levels Between Item To Item-Total Scores Of The Turkish Form of EFI Negative Behavior Subscale**

<b>Item</b>	<b>r</b>	<b>p</b>
22	0.650	0.000**
23	0.756	0.000**
24	0.721	0.000**
26	0.641	0.000**
29	0.472	0.000**
31	0.713	0.000**
33	0.700	0.000**
34	0.578	0.000**
36	0.731	0.000**
39	0.503	0.000**

\*p<0.01

The item-item total correlations for EFI Negative Behavior Subscales are between .47 and .75. The correlation coefficients between item and item-total scores are significant. There is highly significant relationship ( $p<0.01$ ) between all negative items.

**Table 10. The Pearson Correlation Coefficients And Significance Levels Between Item To Item-Total Scores Of The Turkish Form of EFI Cognition Subscale**

<b>İtem</b>	<b>r</b>	<b>p</b>
1	0.268	0.000**
2	0.225	0.000**
3	0.189	0.001**
4	0.438	0.000**
5	0.464	0.000**
6	0.151	0.007**
7	0.455	0.000**
8	0.022	0.694
9	0.053	0.345
10	0.449	0.000**
11	0.475	0.000**
12	0.237	0.000**
13	0.001	0.983
14	0.422	0.000**
15	0.038	0.506
16	0.442	0.000**
17	0.434	0.000**
18	0.040	0.481
19	0.512	0.000**
20	0.452	0.000**

\*\*p<0.01

The item to item-total scores correlation for Cognition Subscale are between .001 and .51. The correlation coefficients between item and item-total score are significant. The internal consistency of the subscale is found as .63. Although some items have low correlations this is due to the properties and concepts of items. In EFI Cognition subscale there are two scales that measures negative and positive cognition. The low correlated items are belong to negative cognition scale. In below give tables the Negative cognition questions and positive cognition questions are evaluated with the related total scores and the correlations are given.

**Table 11. The Pearson Correlation Coefficients And Significance Levels Between Item To Item-Total Score Of The Turkish Form of EFI Positive Cognition Subscale**

<b>İtem</b>	<b>r</b>	<b>p</b>
44	0.754	0.000**
45	0.823	0.000**
47	0.765	0.000**
50	0.821	0.000**
51	0.733	0.000**
54	0.626	0.000**
56	0.800	0.000**
57	0.736	0.000**
59	0.763	0.000**
60	0.743	0.000**

\*\*p<0.01

The item to item-total correlation for EFI Positive Cognition Subscales are between .63 and .82. The correlation coefficients between item to item-total scores are significant. There is highly significant relationship ( $p<0.01$ ) between all positive items.

**Table 12. The Pearson Correlation And Significance Levels Between Item To Item-Total Score Of The Turkish Form of EFI Negative Cognition Subscale**

<b>Item</b>	<b>r</b>	<b>P</b>
41	0.465	0.000**
42	0.695	0.000**
43	0.704	0.000**
46	0.647	0.000**
48	0.731	0.000**
49	0.720	0.000**
52	0.538	0.000**
53	0.738	0.000**
55	0.623	0.000**
58	0.662	0.000**

\*\*p<0.01

The item to item-total correlation for EFI Negative Cognition Subscales are between .46 and .74. The correlation coefficients between item to item-total scores are significant. There is highly significant relationship ( $p<0.01$ ) between all negative items.

### 3.1.3. SPLIT HALVES METHOD

The reliability of the scale was also evaluated by split halves method. Correlation coefficients, significant levels and Cronbach Alpha coefficient are given in table.

**Table 13. The Split Halves Correlation Coefficient of the Turkish Translation of EFI**

<b>Scale</b>	<b>r</b>	<b>P</b>	<b><math>\alpha</math></b>
EFI (60 items)	0.654	0.000**	0.782

\*p<0.01

The EFI correlation coefficient was significant at  $p < 0.01$ . The Cronbach Alpha coefficient for EFI was .78.

The tables below show the Cronbach Alpha Coefficients of subscales of EFI.

**Table 14. The Split Halves Correlation Coefficients Of The Turkish Form of EFI Affect, Behavior And Cognition Subscales**

<b>Subscales</b>	<b>r</b>	<b>P</b>	<b><math>\alpha</math></b>
Affect	0.161	0.006**	0.273
Behavior	0.671	0.000**	0.803
Cognition	0.738	0.000**	0.849

\*p<0.01

The EFI subscales correlation coefficient are significant (p=0.000-0.006). The Cronbach Alpha coefficient are between .27 and .85. The cronbach Alpha Coefficient for Affect subscale was .27, for Behavior subscale was .80, for Cognition subscale Cronbach Alpha coefficient was .85.



**Table 15. The Split Halves Correlation Coefficients Of The Turkish Form of EFI Negative-Positive Subscales Of Affect, Behavior And Cognition Subscales**

<b>Subscales</b>	<b>r</b>	<b>P</b>	<b><math>\alpha</math></b>
Positive Affect	0.834	0.000**	0.909
Negative Affect	0.764	0.000**	0.866
Positive Behavior	0.891	0.000**	0.942
Negative Behavior	0.760	0.000**	0.863
Positive Cognition	0.855	0.000**	0.922
Negative Cognition	0.790	0.000**	0.880

\*p<0.01

The EFI negative-positive subscales correlation coefficient are significant ( $p \leq 0.000$ ). The Cronbach Alpha coefficients are between .86 and .94. The Cronbach Alpha Coefficient for Positive Affect subscale is .90, for Negative Affect subscale is .87, for Positive Behavior subscale Cronbach Alpha coefficient is .94, for Negative Behavior subscale Cronbach Alpha coefficient is .86, for Positive Cognition subscale Cronbach Alpha coefficient is .92, Negative Cognition subscale Cronbach Alpha coefficient is .88.

## **3.2. VALIDITY STUDY**

### **3.2.1. CRITERION RELATED VALIDITY**

The construct validity of the Enright Forgiveness Scale was checked with criterion related other scales which the reliability and validity studies are done before and adapted into Turkish. Because there is no parallel form available for Forgiveness Scale his procedure was done. The validity of EFI and criterion related scales are evaluated with Pearson Corelation statistical analysis.

#### **3.2.1.1. Convergant Validity**

**Table 16. Pearson Corellation Between 1-Item Forgiveness Scale And Enright Forgiveness Inventory**

<b>Scales</b>	<b>r</b>	<b>P</b>
1-Item & EFI	.333	0.000**

\*P<0.01

The Enright Forgveness Inventory and One Item Forgiveness Scales correlation coefficient is significant (P=0.000).

**Table 17. Pearson Corelation Between Pseudo Forgiveness Scale And EFI**

<b>Scales</b>	<b>r</b>	<b>P</b>
pseudo & EFI	.138	0.032*

\*P<0,05

The Enright Forgiveness Inventory and Pseudo Forgiveness Scale correlation coefficient is significant (p=0.032). There is low (r=0.138) correlation.

### **3.2.1.2. Discriminant Validity**

**Table 18. Comparison Of EFI To BDI And SDS**

<b>Scales</b>	<b>r</b>	<b>p</b>
BDI & EFI	0.136	0.045*
SDS & EFI	0.151	0.026*

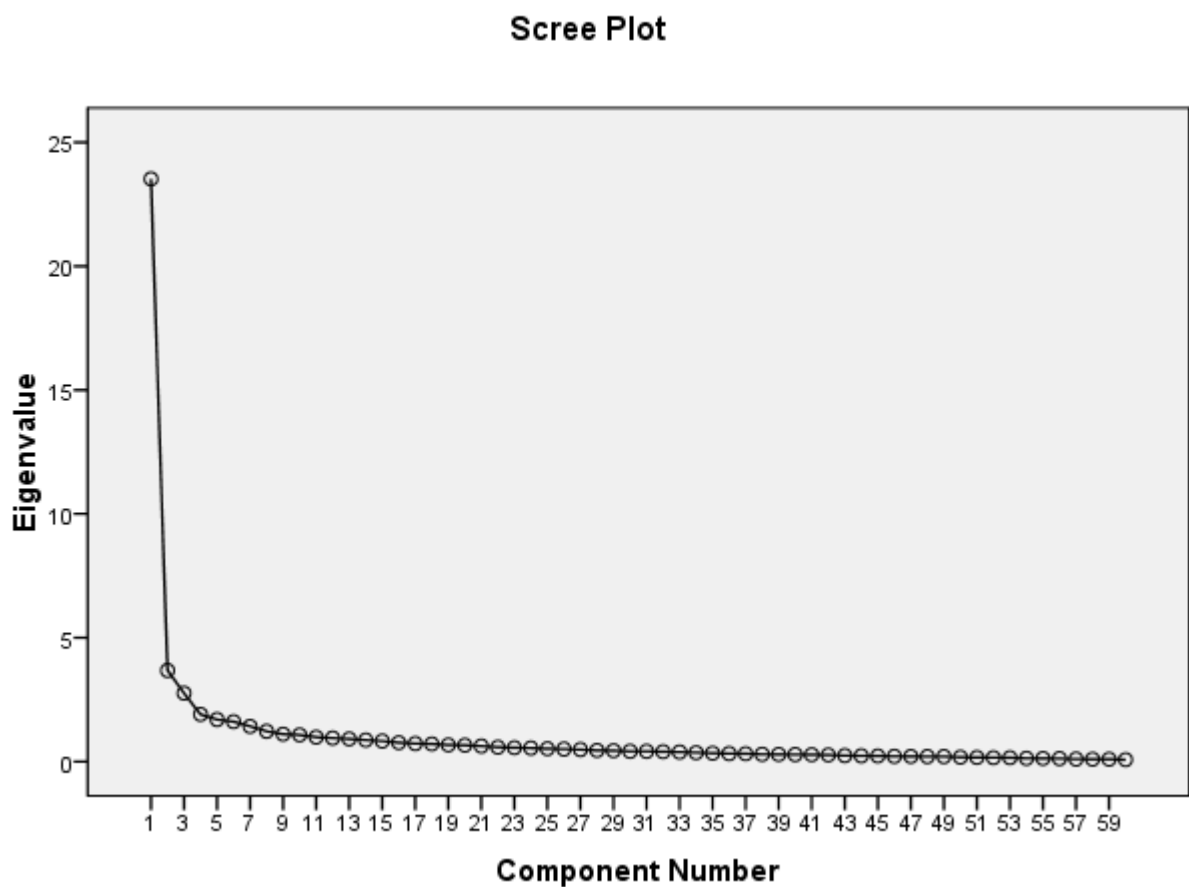
\*P<0,05

The Pearson correlation coefficient were significant (p<0.05). There are weak, positive correlation between EFI and BDI(r=0,136), and SDS (r=0.151).

### 3.2.2. FACTOR ANALYSIS

The participants EFI total scores correlation matrices was extracted from principle Components Analyzes with Direct Oblimin Rotation. 10 factors are found with the Eigenvalues equal or greater than 1.000. The factor loading Oblimin Rotation table and Scree Plot graphic are given in below.

**Graphic 1:**



**Table 19: Factor Distribution According To Oblimin Rotation**

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor8	Factor 9	Factor 10
17 (PA)	,781									
7 (PA)	,772									
1 (PA)	,769									
18(PA)	,740									
4 (PA)	,738									
3 (PA)	,733									
11 (PA)	,727									
35 (PB)	,724									
6 (PA)	,713									
30 (PB)	,702									
25 (PB)	,668									
21 (PB)	,662									
15 (PA)	,655									
37 (PB)	,644									
32 (PB)	,629									
38 (PB)	,628									
40 (PB)	,617									
19 (PB)	,580									
47 (PC)	,576									
56 (PC)	,567									
27 (PB)	,555									
28 (PB)	,545									
60 (PC)		,814								
57 (PC)		,794								
59 (PC)		,765								
54 (PC)		,689								
14 (NA)			,700							
13 (NA)			,634							
8 (NA)			,600							
20 (NA)			,469							
33 (NB)			,406							
44 (PC)				,567						

45 (PC)				,564						
51 (PC)				,562						
50 (PC)				,558						
55 (NC)				-,409						
48 (NC)				-,402						
2 (NA)				-,361						
34 (NB)					,720					
29 (NB)					,608					
39 (NB)					,547					
5 (NA)					,403					
49 (NC)					,400					
58 (NC)					,396					
31 (NB)					,380					
22 (NB)						,713				
24 (NB)						,698				
23 (NB)						,697				
36 (NB)						,486				
10 (NA)							,761			
9 (NA)							,646			
12 (NA)							,602			
16 (NA)							,530			
41 (NC)								,842		
42 (NC)								,801		
43 (NC)								,651		
52 (NC)									,751	
46 (NC)									,559	
53 (NC)									,400	
26 (NB)										-,357

*Abbreviations : PA: Positive Affect, NA: Negative Affect, PB: positive Behavior, NB: Negative Behavior, PC: Positive Cognition, NC: Negative Cognition*

**Table 20: Eigenvalues and Variances for 10 Factors**

<b>Factor</b>	<b>r</b>	<b>Variance (%)</b>	<b>Eigenvalue</b>
Factor 1	1.000	21.685	39.205
Factor 2	.603**	7.014	6.129
Factor 3	-.645**	6.037	4.601
Factor 4	.502**	5.510	3.172
Factor 5	-.598**	5.506	2.826
Factor 6	-.600**	5.372	2.683
Factor 7	-.288**	4.470	2.367
Factor 8	-.380**	4.267	2.033
Factor 9	-.551**	3.592	1.842
Factor 10	-.421**	3.197	1.793

\*p<0.05

The variances of 10 factors are respectively for Factor 1 is 21.685%, for factor 2 is 7.014%, for factor 3 is 6.037%, for factor 4 is 5.510%, for factor 5 is 5.506%, for factor 6 is 5.372%, for factor 7 is 4.470% for factor 8 is 4.267%, for factor 9 is 3.592% and for factor 10 is 3.197%. The total variance is 66.651. The eigen values respectively for 10 factors are factor 1 is 39.205, for factor 2 is 6.129, for factor 3 is 4.601, for factor 4 is 3.172, for factor 5 is 2.826, for factor 6 is 2.683, for factor 7 is 2.367, for factor 8 is 2.033, for factor 9 is 1.842, for factor 10 is 1.793.

**Table 21. Factor Distribution According To Oblimin Rotation**

	Factor 1	Factor 2	Factor 3
1 (PA)	,788		
35(PB)	,769		
7 (PA)	,767		
30(PB)	,760		
17 (PA)	,755		
18(PA)	,744		
38(PB)	,723		
11(PA)	,720		
32(PB)	,708		
3(PA)	,695		
6(PA)	,692		
40(PB)	,684		
37(PB)	,679		
25(PB)	,677		
47(PC)	,674		
51(PC)	,673		
4(PA)	,666		
56(PC)	,666		
15(PA)	,663		
21(PB)	,654		
44(PC)	,647		
50(PC)	,646		
45(PC)	,636		
28(PB)	,634		
27(PB)	,594		
19(PA)	,553		
8(NA)		,644	
36(NB)		,626	
14(NA)		,622	
13(NA)		,621	



23(NB)		,613	
24(NB)		,610	
31(NB)		,590	
12(NA)		,587	
10(NA)		,578	
9(NA)		,535	
20(NA)		,496	
33(NB)		,486	
16(NA)		,485	
22(NB)		,480	
20(NA)		,478	
53(NC)		,472	
43(NC)		,459	
48(NC)		,449	
42(NC)		,429	
55(NC)		,404	
26(NB)		,368	
52(NC)		,332	
41(NC)		,279	
57(PC)			,767
60(PC)			,746
59(PC)			,708
54(PC)			,638
49(NC)			-,615
29(NB)			-,591
58(PC)			-,513
39(NB)			-,462
34(NB)			-,462
5(NA)			-,395
46(NC)			-,379

**Table 22. Eigenvalues and Variances for 3 Factor**

<b>Factor</b>	<b>Variance (%)</b>	<b>Eigenvalue</b>
Factor 1	25.270	39.205
Factor 2	13.935	6.129
Factor 3	10.729	4.601

\*p<0.01

The variances of 3 factors are respectively for Factor 1 is 25.270%, for factor 2 is 13.935%, for factor 3 is 10.729%. The total variance is 49.935. The eigenvalues respectively for 3 factors are factor 1 is 39.205, for factor 2 is 6.129, for factor 3 is 4.601.

### 3.3. COMPARISON OF EFI SUBSCALE SCORES ACCORDING TO AGE AND GENDER

**Table 23. Comparison Of EFI Subscales According To Gender**

	<b>Gender</b>	<b>n</b>	<b>Mean ± Std. Deviation</b>	<b>p</b>	<b>t</b>
EFI	Female	123	192.50 ± 23.73	0.669	0.428
	Male	117	190.97 ± 31.59		
Affect Subscale	Female	146	63,90 ± 11,18	0.110	1.604
	Male	147	61,50 ± 14,31		
Behavior Subscale	Female	149	63,67 ± 10,02	0.899	-0.126
	Male	154	63,84 ± 12,69		
Cognition Subscale	Female	153	64,91 ± 9,30	0.911	-0.111
	Male	161	65,04 ± 11,14		
Pseudo forgiveness Subscale	Female	166	9,83 ± 4,27	0.000	-4.401
	Male	179	11,98 ± 4,78		
1 – Item Forgiveness Scale	Female	165	2,54 ± 1,41	0.388	-0.865
	Male	173	2,69 ± 1,36		

\*p<0.05

The means and standard deviations of the scores of the participant of the research were shown in the table 22.. In the research the sample is consist of 349 subjects (n=167 female and n=182 male). When we compare subscales of EFI according to gender with Student's t-test, we find that male participants have significantly higher pseudo forgiveness scale scores (p= 0.000) compared to other gender.

**Table 24. Comparison of EFI Positive - Negative Subscales Scores According To Gender**

	<b>Gender</b>	<b>n</b>	<b>Mean ± Std. Deviation</b>	<b>p</b>	<b>t</b>
Positive Affect Subscale	Female	155	32,07 ± 15,49	0.455	-.752
	Male	164	33,29 ± 13,37		
Negative Affect Subscale	Female	156	31,22 ± 12,38	0.061	1.882
	Male	159	28,70 ± 11,37		
Positive Behavior Subscale	Female	155	34,75± 15,64	0.300	-1.042
	Male	162	36,44 ± 13,18		
Negative Behavior subscale	Female	159	28,84± 12,84	0.246	1.167
	Male	166	27,31 ± 10,74		
Positive Cognition subscale	Female	159	38,90 ± 14,21	0.730	-.347
	Male	172	39,42 ± 13,04		
Negative Cognition Subscale	Female	158	26,06 ± 12,42	0.648	.459
	Male	165	25,48 ± 10,17		

\*P<0.05

When we compare the mean scores of negative-positive subscales of EFI according to gender with Student t-test, there was no statistically significant differences between subscales according to gender.

**Table 25. The Person Correlation Coefficient of participants age according to their subscale scores**

Scale	Age	
	r	p
Affect subscale	-0.074	0.211
Behavior subscale	-0.154	0.007**
Cognition subscale	0.036	0.523
Positive affect subscale	-0.144	0.010*
Negative affect subscale	0.117	0.038*
Positive behavior subscale	-0.132	0.018*
Negative behavior subscale	0.028	0.611
Positive cognition subscale	-0.088	0.112
Negative cognition subscale	0.143	0.010*

\*\*p<0.01

The Pearson correlation coefficient of age according to participant subscale scores were examined. As age increases negative affect subscale score and negative cognition subscale score increase, there are significant positive mild correlations. As age increases, behavior subscale, positive affect subscale and positive behavior subscale scores decrease, there are significant negative mild correlations.

**Table 26. The Comparison of EFI Subscales Scores According To Nationalities.**

	Nationality	n	Mean ± Std. Deviation	p	t
Affect Subscale	TRNC	89	63.67±13.72	0.381	0.877
	TR	191	62.20±12.74		
Behavior Subscale	TRNC	91	63.41±10.86	0.778	-0.282
	TR	200	63.82±11.89		
Cognition Subscale	TRNC	93	65.96±10.51	0.297	1.045
	TR	208	64.63±9.97		
Positive Affect	TRNC	94	35.13±15.06	0.035*	2.121
	TR	212	31.36±14.02		
Negative Affect	TRNC	92	28.43±11.56	0.108	-1.613
	TR	210	30.83±12.04		
Positive Behavior	TRNC	93	37.51±14.71	0.086	1.723
	TR	211	34.41±14.30		
Negative Behavior	TRNC	95	26.08±11.44	0.035*	-2.120
	TR	217	29.16±11.95		
Positive cognition	TRNC	95	40.98±14.01	0.099	1.653
	TR	221	38.25±13.22		
Negative cognition	TRNC	94	25.00±11.34	0.334	-0.967
	TR	216	26.36±11.41		

\*p<0.01

In the table 24 the means and standard deviations of the participant of the research were shown. In the research the sample is consist of 349 subjects (n=98 TRNC and n=236 from Turkey). When we compare the mean subscale scores of participants from Turkey to from TRNC with Student's t-test, we only find that participants from TRNC have higher positive affect subscale scores (p=0.035) and lower negative behavior subscale scores (p=0.035) compared to other group.

#### **4. DISCUSSION**

The aim of the study is to translate the EFI into Turkish and evaluate the reliability and validity of the scale for Turkish society

The findings about reliability of the scale was significant. The internal consistency of EFI was found as  $\alpha = .79$ . The original reliability and validity studies were done by Subkoviak et al.(1995) with 394 participants. Half of the sample was college students from public university of Midwestern United States and other half of the participants was their same-gender parents. In this study the Cronbach alpha coefficients of EFI was found .98. The research of Sorinopoulos in 1996 about the EFI, was done with 219 participants. 157 females and 62 males, half of the college students and other half of the participants was their same-gender parents. In this research the Cronbach alpha coefficient of EFI was found .98. The other research of Sorinopoulos was done with 129 females and 63 males (half of the college students, other half of the same-gender parents) in 1999 and in this study the Cronbach Alpha Coefficients was found .99. The validation study of the Dutch version of the EFI was done by Orathinkal in 2006 with 731 heterosexually married participants(359 males,372 females) and in this study the Cronbach alpha coefficient of the EFI was found .98.

Cronbach alpha values for subscales of EFI in our study were 0.68 for EFI Affect subscale, 0.66 for EFI Behavior subscale and 0.63 for EFI Cognition subscales. In the other studies mentioned above, the Cronbach alpha values for the subscales were found to be between 0.95-0.98. The Cronbach Alpha levels for EFI and for its subscales in our study were all significant(higher than 0.60). When we compare these results with other studies done abroad, we see the Cronbach alpha levels seem to be higher in the other studies. This can be due to age distribution of the sample. Our sample consisted of only university students but the samples of other studies included a larger range of age.

Another important step of to determine reliability of EFI was the results taken from the split halves method. Split –halves method was applied to the whole inventory

then it was applied to all three subscales and then to each negative-positive dimension of subscales. The Cronbach alpha coefficients for the EFI is .78, The Cronbach alpha coefficients for the Affect, behavior and cognition subscales ranged between .27 - .85, The Cronbach alpha coefficients for the negative – positive dimension of subscales ranged between .86 -.94. The results of split halves method for the EFI and its subscales supports the results of internal consistency study ( $\alpha=0.78$ ) and shows that EFI and its subscales are reliable.

For reliability study of EFI, third measure was item to item-total correlation. the correlation coefficient for item to item-total scores for each subscale were found to have significantly high correlations. While the examination of item to item-total correlation of whole EFI, some items are low and/or negative but this may be because of the structure of inventory. It consists of negative subscales and low and/or negative correlations belonging to items of negative subscales. This awareness led us to examine the item to item-total correlations of all negative and positive dimensions of each subscale separately. At the result of this examination strong relationships found between items of negative subscale and items of positive subscale. This shows that, EFI has internal consistency for all its subscales.

For the validity analysis, firstly the criterion related validity was performed. 1-Item Forgiveness Scale was used for examining the convergent validity of EFI. A statistically significant relationship was found between EFI and 1-Item Forgiveness scale ( $r=0.333$ ). For the second step of validity analysis, BDI and SDS scores were used to analyse discriminant validity of EFI. In the statistical analysis the Pearson correlation coefficient between the EFI and BDI is  $r=0.14$ . The Pearson correlation coefficient between the EFI and SDS is  $r=0.15$ . These indicates weak and positive relationship between EFI and others. These weak correlations shows that these scales measure different dimensions and show that EFI has discriminant validity. In the literature some research about the translation of EFI to other language were found approximately same correlation coefficient. (Orathinkal, et.al, 2007).



A factor analysis was performed for the construct validity for the Turkish form of EFI. The correlation matrices of EFI total scores of all the participants were extracted by principle component analysis with varimax rotation. 10 factors were found with the eigenvalues equal or greater than 1.00. When we examine these factors, some of them are parallel to positive or negative items of one subscale that is either affect, behavior or cognition. But some of the factors we found were formed from items of different subscales but even the items forming a factor come from different subscales, they were all at the same dimension, either positive or negative. In the original studies they found 3 factors.

In this factor analysis KMO-Bartlett's test results found 0.94 ( $p=0.000$ ). The factor loadings for factor 1 ranged between .545 and .781. As the items Turkish translation indicate in table 17 the items good, tender, warm, affection, happy, kindness, goodwill, establish good relations with him/her, positive, reach out to him/her, help, show friendship, caring, do a favor, lend him/her a hand, aid him/her when in trouble, attend his/her party, friendly, loving, think favorably of him/her, treat gently, be considerate are in factor 1.

The factor loadings for factor 2 ranged between .689 and .814. as presented in table 17 the items hope he/she finds happiness, hope he/she does well in life, hope he /she succeeds, wish him/her well are in factor 2.

The factor loading for factor 3 ranged between .40 and .70. As presented in table 17 the items dislike, cold, unloving, disgust, not speak to him /her are in factor 3.

The factor loading for factor 4 ranged between .36 and .57. As presented in table 17 the items- of good quality, worthy of respect, nice, a good person disapprove of him/her, worthless, negative are in factor 4. The factor 4 have negative factor loading.

The factor loading for factor 5 ranged between .38 and .72. As presented in table 17 act negatively, speak ill of him/her, be biting when talking with him/her, hostile,

immoral, condemn the person, not attend to him /her are in factor 5. Factor 5 includes negative items.

The factor loading for factor 6 ranged between .49 and .71. As presented in table 17 the item avoid, neglect, ignore, stay away are in factor 6. Factor 6 have negative items.

The factor loading for factor 7 ranged between .53 and .76. As presented in table 17 the item resentment, repulsed, angry, bitter are in factor 7. The factor 7 have negative items . the factor 7 named as Negative Affect Subscale.

The factor loading for factor 8 ranged between .65 and .84. As presented in table 17 the item wretched, evil, horrible are in factor 8. The factor 8 have negative items.

The factor loading for factor 9 ranged between .40 and .75. As presented in table 17 The item “corrupt, dreadful, a bad person” are in factor 9. The factor 8 and factor 9 named as Negative Cognition Subscale.

The factor loading for factor 10 ranged between -.36 As presented in table 17. The item “put him her down” is in factor 10. The factor 10 have negative factor loading. We think that to form the tenth factor (put him/her down), because of the term is rarely used in Turkish, this may caused to lack of understanding by participants.

After this factor analysis we made again a factor analysis for predispose the original factor structure. From this analysis 3 factor obtained like the original results. The items 1 (pa), 35(pb), 7(pa), 30(pb), 17(pa), 18(pa), 38(pb), 11(pa), 32(pb), 3(pa), 6(pa), 40(pb), 37(pb), 25(pb), 47(pc), 51(pc), 4(pa), 56(pc), 15(pa), 21(pb), 44(pc), 50(pc), 45(pc), 28(pb), 27(pb), 19(pa) are in factor 1. The items 8(na), 36(nb), 14(na), 13(na), 23(nb), 24(nb), 31(nb), 12(na), 10(na), 9(na), 20(na), 33(nb), 16(na), 22(nb), 2(na), 53(nc), 43(nc), 48(nc), 42(nc), 55(nc), 26(nb), 52(nc), 41(nc) are in factor 2. The items 57(pc), 60(pc), 59(pc), 54(pc), 49(nc), 29(nb), 58(pc), 39(nb),

34(nb), 5(na), 46(nc) are in factor 3. When we examine the factors regular distribution is seen.

When we compare the mean of subscale scores for gender, there were no significant differences between male and female for Enright Forgiveness Inventory but we find that female participants have slightly higher scores for negative affect ( $p=0.061$ ). In the literature some research suggest that the females more forgiving than males. And the research shows this reason may be due to the prize to relationship, personality, empathy and other some differences. (Miller, Worthington, McDaniel, 2008)

When we compare the mean of subscale scores for nationalities, we find that only two significant differences between participants according to their nationalities. TRNC participants have significantly higher scores for positive affect ( $p=0.035$ ) and Turkey participants have significantly higher scores for Negative behaviour subscales ( $p=0.035$ ). In the table 24 the mean score according to nationalities are given and two variables computed. The other variables consist of the small amount of sample because of this reason they are not to add analyse. At the other reliability-validity studies for Turkish translations of different scales, no significant difference was found between participants from TRNC and TR.

There is no significant correlation between age and some subscales. There is significant and negative correlation between age and behavior subscale ( $r= -0.154$ ), positive behavior subscale ( $r= -0.138$ ) and positive affect subscale ( $r= -0.144$ ). There is significant and positive relationship between the age and negative cognition subscales ( $r=0.143$ ) ( $p=0.032$ ). This shows age may positively or negatively effect forgiveness dimensions.

## **5. CONCLUSION**

The present study results indicates that the Turkish form of EFI and it's subscales are psychometrically sound. This study provides a reliable and a valid inventory for assessing forgiveness that can be used by professionals both in TRNC and Turkey.

Further studies should be conducted with diverse groupsof different age and social status.

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