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**RESEARCH ARTICLE / ARAŞTIRMA YAZISI**

# The Relationship Between Traumatic Stress Symptoms and Basic Psychological Needs, Irrational Beliefs, and Mood in a Non-Clinical Population

## Klinik Olmayan Popülasyonda Travma Sonrası Stres Belirtileri, Temel Psikolojik İhtiyaçlar, İrrasyonel İnanışlar ve Duygudurum Arasındaki İlişki

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**Abstract:**

This study was conducted to examine the relationship between Trauma Stress Symptoms (TSS) and basic psychological needs, irrational beliefs, and mood in the non-clinical population. A total of 212 participants, 127 with TSS symptoms and 85 without TSS symptoms, in the 18-52 age range were included in the study. Demographic Information Form, Impact of Event Scale- Revised (IES-R), Basic Psychological Needs Satisfaction Scale (TPIO), Shortened General Attitudes and Beliefs Scale (GTIO-SF), and Positive and Negative Affect Meause (PANAS) were used as data collection tools. In the Independent Sample T Test analysis performed between groups with and without TSS symptoms; compared to the participants who did not show PTS symptoms, the total score of GTIO-SF and this scale's "irrational beliefs", "devaluation of others", "expectation of justice", "seeking comfort", "irrational beliefs of achievement", "irrational beliefs of approval", "self-devaluation " sub-dimensions, PANAS total score and its sub-dimension "negative mood" sub-dimension were significantly higher; It was determined that PTS symptoms and irrational thoughts and negative mood were positively and significantly correlated with the basic psychological needs scale scores, and negatively and significantly. Multiple linear regression analysis results; it was determined that the presence of trauma predicted the total score of GTIO-SF and its sub-dimension "comfort seeking" positively in the group with PTS symptoms, and "need for autonomy", which was the sub-dimension of the TPIO scale, negatively, at a level of 38%. This study showed that PTS symptoms and individuals' irrational thoughts and negative mood are positively related while basic psychological needs are negatively related, and the presence of PTS symptoms plays a predictive role in developing irrational beliefs and negative affect, and in meeting the need for autonomy. The findings obtained from the research were discussed in the light of the literature, limitations and suggestions for future research were presented.

**Keywords**: Post Traumatic Stress Symptoms, Basic Psychological Needs, Irrational Beliefs, Mood

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## Öz:

Bu çalışma klinik olamayan popülasyonda Travma Sonrası Stres Belirtileri (TSSB) ile temel psikolojik ihtiyaçlar, irrasyonel inanışlar ve duygudurum arasındaki ilişkiyi incelemek amacıyla yapılmıştır. Çalışmaya 18-52 yaş aralığında, TSSB belirtisi gösteren 127 ve TSSB belirtisi göstermeyen 85 olmak üzere toplam 212 katılımcı alınmıştır. Veri toplama araçları olarak Demografik Bilgi Formu, Olayların Etkisi Ölçeği (OEÖ), Temel Psikolojik İhtiyaçlar Ölçeği (TPİÖ), Genel Tutum ve İnanışlar Ölçeği Kısa Formu (GTİÖ) ile Pozitif ve Negatif Duygu Durum Ölçeği (PANAS) kullanılmıştır. TSSB belirtisi gösteren ve TSSB belirtisi göstermeyen gruplar arasında yapılan Bağımsız Örneklem T Testi analizinde; TSSB belirtisi gösteren katılımcıların TSSB belirtisi göstermeyen katılımcılara oranla GTİÖ toplam puanında ve bu ölçeğin irrasyonel inanışlar, başkalarını değersizleştirme, adalet beklentisi, konfor arayışı, başarma irrasyonel inanışları, onaylanma irrasyonel inanışları, kendini değersizleştirme alt boyutları ile PANAS toplam puanında ve alt boyutu olan negatif duygudurum alt boyutundan anlamlı derecede daha yüksek puan aldığı görülmüştür. Korelasyon analizleri sonucunda da TSSB belirtisi gösteren katılımcıların GTİÖ toplam puanı ile ölçeğin irrasyonel düşünce boyutları olan irrasyonel inanışlar, başkalarını değersizleştirme, adalet beklentisi, konfor arayışı, başarma irrasyonel inanışları, onaylanma irrasyonel inanışları, kendini değersizleştirme alanları ile PANAS ölçeğinin negatif duygulanım boyutunun pozitif ve anlamlı, TPİÖ puanları ile negatif ve anlamlı ilişkiler gösterdiği saptanmıştır. Çoklu doğrusal regresyon analiz sonuçları ise; TSSB belirtisi gösteren grupta travmanın GTİÖ toplam puanının ve alt boyutu olan konfor arayışının pozitif yönde ve TPİÖ ölçeğinin alt boyutu olan özerklik ihtiyacının negatif yönde ve %38 düzeyinde yordadığı saptanmıştır. Bu çalışma TSSB ile bireylerin irrasyonel düşüncelerinin ve negatif duygulanımının pozitif yönlü, temel psikolojik ihtiyaçların negatif yönlü ilişkili olduğunu ve TSSB'nin varlığının irrasyonel inanışlar ile negatif duygulanım geliştirmede, özerklik ihtiyacının karşılananamamasında yordayıcı bir rol oynadığını göstermiştir. Araştırmadan elde edilen bulgular literatür ışığında tartışılmış, sınırlılıklar ve gelecek araştırmalar için öneriler sunulmuştur.


**Anahtar Kelimeler:** Travma Sonrası Stres Bozukluğu, Temel Psikolojik İhtiyaçlar, İrrasyonel İnanışlar, Duygudurum

## Introduction

Trauma is experienced as a overpowering life event in people's lives. In the event of trauma, the reactions of individuals differ according to variables such as genetic predisposition, psychological resilience, cultural factors, and environmental interaction (Jobson & O'Kearney, 2009). "Post Traumatic Stress Disorder" (PTSD), is defined as a disorder with distinctive symptoms that can occur after direct experience of traumatic events such as serious injury, death or threat of death, or sexual assault in respect of the DSM-5 classification; such an disorder can also be triggered even after witnessing such traumatic events. Such a challenging life experience can have negative physical, emotional and social effects on a person's life. In this context, it is crucial to determine the preventive factors against the possible negative effects of trauma.

It is known that cognitions are also affected in post-traumatic stress disorder, whereby individuals tend to undergo a change in mental process (Hyland et al., 2014). Moreover, according to the Rational Emotional Behavior Theory, an individual has the potential to think both rationally as well as irrationally (Karataş & Yavuzer, 2018). Furthermore, humans have an innate tendency for behaviors such as self-preservation, feeling happy, affiliation, thinking, bonding, and self-actualization (Corey, 2013). However, they also are as much predispositioned towards behaviors such as avoidance of thought, intolerance, perfectionism and self-blame. Additionally, irrational beliefs are unsound and inconsistent thought patterns that lead to emotional distress and not to mention, emotional discomfort occurs as a result of self-critical and self-harming speech that an individual constantly repeats to oneself (Ellis, 1995). Accordingly, Ellis consistently emphasizes that one will feel as one thinks and that negative emotional reactions are based on irrational beliefs formed by the counselee. It can be expected that irrational beliefs, which have an important role in people's reactions to traumatic situations that they are exposed to or indirectly experience, are related to PTSD symptoms.

Similarly, in the psychological literature, people who experience negative emotional states are known to generally suffer from negative moods, having difficulties in environmental adaptation in daily life, and be inclined to evaluate situations with an unrealistic negativity. On the other hand, studies have found that people with high positive affect are less influenced by negative situations, and their ability to evaluate problems with reality as well as cope with them is more functional (Watson & Clark, 1984). The increase in positive affect in PTSD symptoms is expected to have a therapeutic effect on the symptom level.

Another preventive factor in PTSD symptoms is considered to be the satisfaction of basic psychological needs. According to the theory of self-determination, it is to be discovered a set of identifiable psychological and social nutrients that facilitate growth, wholeness, and well-being when an individual is satisfied within the interpersonal and cultural contexts of their development. Thus, in case of satisfaction of such psychological needs

are hindred or overlooked, serious psychological harm comes into play (Deci & Ryan, 2000). The process of such satisfactions, which are necessary for personality and cognitive development, are known as basic psychological needs (Ryan & Deci, 2008). The same self-determination theory also stresses on that in order for a need to be a basic psychological need, it must remain necessary regardless of cultural context and developmental processes. It is expected that when individuals' needs for a sense of achievement, a sense of control about their life and their environment, as well as a sense of relatedness are met, they will then be able to cope with trauma symptoms more efficacously.

The research carried out in the light of all the information above aimed to analyze the internal resources that will reduce the PTS symptoms of people with PTSD symptoms and support the treatment process. For this purpose, it focuses on the relationship between post-traumatic stress symptoms and irrational beliefs as well as moods and basic psychological needs. In the study, the correlations between PTSD symptoms, basic psychological needs, irrational beliefs and mood were put under the scope; the findings obtained as a result of the analyses were discussed and compared with the relevant literature.

In view of the literature review, the research questions on the subject are as follows:

i.Is there a significant relationship between PTS symptoms and basic psychological needs, irrational beliefs, and mood?

ii.To what extent can PSS symptoms predict variables of basic psychological needs, irrational beliefs, and mood?

## Methods

### Research Model

This research is implemented by way of relational screening method. Relational screening model is a screening approach that aims to determine the existence of co-variation between two or more variables. This screening model aims to determine whether the variables show correlative diversity as well as how a change in variable functions if it occurs (Karasar, 2011). The subject group of the research consists of all students studying at universities in Istanbul. The statistics of the Higher Education Council (YÖK) for the 2019-2020 academic year shows the number of university students in Istanbul to be a total of 1,409,655. It is recommended that the sample size be at least 30 in terms of generalizability of the findings obtained in relational studies, minimizing the error variance, and a credible representativity of the subject group (Frankel et al., 2012). In the light of this data, a number of 212 university students represent the sample of the research. Due to the pandemic in the country at the time of the research, the participant selection was performed haphazardly through virual network channels by way of the appropriate sampling method.

### Data Collection Tools

Demographic Information Form: It is a form prepared by the researcher where the questions reflect the participants' age, gender, education level, marital status, occupation, economic status, whether or not they have received psychological support, and if so, what kind of psychological support they have received.

**The Impact of Events Scale (IES-R)**: a 22-item scale developed by Weiss and Marmar in 1997 to detect the symptoms of traumatic stress symptoms. The three sub-dimensions of the scale are re-experiencing (items 1, 2, 3, 6, 9, 14, 16, 20), avoidance (items 5, 7, 8, 11, 12, 13, 17, 22) and overstimulation (items 4, 10, 15, 18, 19, 21). The scale was adapted into Turkish by Çorapçıoğlu et al. (2006). In this study, Cronbach's Alpha values were determined as .93 for scale total score and between .78-.91 for scale sub-dimensions.

**Basic Psychological Needs Scale (TPIO):** is a 21-item set of scales created by Deci and Ryan (2000). The scale aims to diagnose to what extent the person meets their basic psychological needs, where the high score obtained from the scale increases in direct proportion to the satisfaction of needs. This study shows results by way of the interpersonal relations version of the Basic Psychological Needs Scale. This form scale consists of 9 items and 3 subscales which comprise the need for autonomy, the need for competence and the need for relatedness as the three subscales consisting of 3 items each. One item from each subscale was included in the analysis by rending the reverse question positive. The Turkish adaptation of the scale, which consists of a 5-point Likert-type rating, was fashioned by Kesici et al. (2003). In this study, Cronbach's Alpha values were determined as .91 for scale total score and between .82-.83 for scale sub-dimensions.

**Positive and Negative Mood Inventory (PANAS)**: It is a scale developed by Watson et al. (1988) to examine a person's mood with its positive and negative dimensions. The scale, which consists of 20 items and two dimensions with those of positive and negative, is evaluated with a 5-point Likert-type rating. The Turkish adaptation was fashioned by Gençöz (2000). In this study, Cronbach's Alpha values were determined as .74 for scale total score and between .86-.91 for scale sub-dimensions.

**General Attitudes and Beliefs Scale Short Form (GTIO-SF):** It was developed by Lindler, Kirkby, Wertheim, and Birch (1999) to measure irrational beliefs and this scale consists of 26 items and 7 subscales. This a 5-point Likert-type scale form includes 7 sub-dimensions the subheadings of Rationality (Ras), Self-Devaluation (Kde), Irrational Beliefs to Achieve (Bii), Approval Beliefs (Oii), Comfort Seeking (Ka), Justice Expectation (Ab) and Devaluation of Others (Bde). While the rationality subscale shows rational beliefs, the other 6 subscales show irrational beliefs (Artıran, 2019). Therefore, rationality subscale items in the data analysis section were included into the analysis as reverse items. The Turkish adaptation of the scale was carried out by Artıran (2019). In this study, Cronbach's Alpha values were determined as .90 for scale total score and between .71-.87 for scale sub-dimensions.

### Research Method

After the approval of the Maltepe University Ethics Committee, where the research was conducted, the data were collected through the participant-adjusted sampling methods with the participants contacted via the Internet. Before the application, the participants were informed

about the purpose and procedure of the research, after which the volunteered participants administered the scales in private. The time to fill in the scales took approximately 10 minutes.

**Statistical Analysis**

All data were analyzed in SPSS IB 23 program. Firstly, the results from the relevant scales and their sub-dimensions including their standard deviation, average value, as well as lowest and highest values, together with Cronbach's Alpha values were gathered; as a result of the analysis, the scale reliability of the sample was determined to be considerably reliable in the range of 0.71 - 0.93. Afterwards, the homogeneity and normality conditions of the scales used in the research were examined and it was determined that the total score averages of the scales had a standard distribution. After this process, the sample, which is based on the 33 points and the cut-off score of the IES-R, was revised whereby the participants who scored above 33 points were divided into two groups as the group showing PTS symptoms, and the participants with a score below 33 points as the group without PTS symptoms. The study utilized T-test for Independent Groups to look into the differences in variables between the two groups; Pearson's Correlation Analysis was applied to examine the correlation between the responses of the two groups, and Multiple Regression Analysis was applied in order to investigate the co-effects of the variables from the sampling.

**Results**

The sample of this study consists of 212 people. The age range of 127 participants with PTS symptoms was 18-52 (mean = 26.02, SD = 6.92). Most of the participants were women (73.2%), university students (85.0%), singles (70.1%), unemployed (58.7%), and upper-middle income (44.4%) (Table 1).

**Table 1.** Demographics and characteristics of the group with PTSD Symptoms

| | SD | Mean | N | % |
|---|---|---|---|---|
| Age | 6.92 | 26.02 | 127 | |
| Gender | | | | |
| Female | | | 93 | 73.2 |
| Male | | | 34 | 26.8 |
| Relationship Status | | | | |
| Married | | | 10 | 7.9 |
| Single | | | 89 | 70.1 |
| Divorced | | | 5 | 3.9 |
| Flirty Relationship | | | 23 | 18.1 |
| Education Status | | | | |
| License | | | 108 | 85.0 |
| Graduate | | | 16 | 12.6 |
| Doctorate | | | 3 | 2.4 |
| Working Status | | | | |
| Employed | | | 52 | 41.3 |
| Unemployed | | | 74 | 58.7 |
| Economical Situation | | | | |
| Low | | | 4 | 3.2 |
| Lower Middle | | | 13 | 13.5 |
| Upper Middle | | | 39 | 44.4 |
| High | | | 53 | 42.1 |
| I don’t want to specify. | | | 17 | 13.5 |

The age range of 85 participants who showed zero sign of PSS was 18-52 (mean = 27.08, SD = 6.68). Most of the participants were women (61.2%), university students (72.9%), singles (61.2%), employed (58.3%), and upper-middle income (27.4%) (Table 2).

**Table 2**. Demographics and characteristics of the group without PTSD Symptoms

| | SD | Mean | N | % |
|---|---|---|---|---|
| Age | 8.32 | 24.2 | 85 | |
| Gender | | | | |
| Female | | | 52 | 61.2 |
| Male | | | 33 | 38.8 |
| Relationship Status | | | | |
| Married | | | 15 | 17.6 |
| Single | | | 52 | 61.2 |
| Divorced | | | 1 | 1.2 |
| Flirty Relationship | | | 17 | 20 |
| Education Status | | | | |
| License | | | 62 | 72.9 |
| Graduate | | | 18 | 21.2 |
| Doctorate | | | 5 | 5.9 |
| Working Status | | | | |
| Employed | | | 49 | 58.3 |
| Unemployed | | | 35 | 41.7 |
| Economical Situation | | | | |
| Low | | | 0 | 0.1 |
| Lower Middle | | | 5 | 6.0 |
| Upper Middle | | | 23 | 27.2 |
| High | | | 47 | 56.0 |
| I don’t want to specify. | | | 9 | 10.7 |

Irrational beliefs, moods and basic psychological needs differ significantly in the answers given by groups with and without PTS symptoms. Compared to the group without PTS symptoms, the group showing TSS symptoms draws a graphic that is higher and significantly different on average in relation to the sum of the irrational beliefs and sub-dimensions of "irrationality", "devaluation of others", "expectation of justice", "seeking comfort", "irrational beliefs of achievement", "irrational beliefs of approval", "devaluation of oneself". When the mood of the two groups is examined; it is noted that the participants with PTS symptoms have higher positive and negative affect total and negative affect compared to the other group. When the satisfaction of basic psychological needs was examined, it is discovered that the achievement of the satisfaction of basic psychological needs as well as the sub-dimensions of "autonomy", "competence" and "relatedness" were more higher than the group with PTS symptoms (Table 3).

**Table 3.** Independent Sample T-Test According to Scale Responses of Groups

| | Mean | t | p |
|---|---|---|---|
| GTIO-Total | | -5.60 | .001 |
| 1 | 62.89 | | |
| 2 | 77.13 | | |
| Irrational Beliefs | | -2.72 | .007 |
| 1 | 8.22 | | |
| 2 | 9.58 | | |
| Devaluation of Others | | -3.79 | .001 |
| 1 | 7.75 | | |
| 2 | 9.46 | | |
| Justice Expectation | | -3.69 | .001 |
| 1 | 13.07 | | |
| 2 | 14.99 | | |

| | | | |
|---|---|---|---|
| Comfort Seeking | | -5.57 | .001 |
| 1 | 10.71 | | |
| 2 | 13.71 | | |
| Irrational Beliefs to Achieve | | -3.69 | .001 |
| 1 | 11.14 | | |
| 2 | 13.22 | | |
| Irrational Beliefs to Approval | | -5.27 | .001 |
| 1 | 5.84 | | |
| 2 | 8.21 | | |
| Self-Devaluation | | -4.37 | .001 |
| 1 | 5.96 | | |
| 2 | 8.28 | | |
| PANAS-Total | | -4.68 | .001 |
| 1 | 51.76 | | |
| 2 | 58.31 | | |
| Negative Dimension | | -8.44 | .001 |
| 1 | 19.47 | | |
| 2 | 27.99 | | |
| TPIO-Total | | 4.43 | .001 |
| 1 | 40.12 | | |
| 2 | 35.96 | | |
| The Need For Autonomy | | 4.63 | .001 |
| 1 | 13.60 | | |
| 2 | 12.01 | | |
| The Need for Competence | | 4.05 | .001 |
| 1 | 13.35 | | |
| 2 | 12.02 | | |
| The Need for Relatedness | | 3.05 | .001 |
| 1 | 13.16 | | |
| 2 | 12.07 | | |

1= Non-PTSD group, 2= Group with PTSD

For the group with PTSD symptoms, it has been found by way of the IES-R scale that there is a positive correlation between the irrational beliefs and sub-dimensions of "devaluation of others", "comfort seeking", "irrational beliefs of approval", "irrational beliefs of achievement", "self-devaluation", "rationality", "justice expectation" and mood sub-dimension “negative mood”. When the relationship between PTS symptoms and "autonomy", "relatedness" and "competence", which are sub-dimensions of basic psychological needs satisfaction, was examined, the direction of this correlation was found to be negative (Table 4). Correlation analysis results show that PTSD symptoms and irrational beliefs and negative mood increase or decrease concurrently, whereas satisfaction of basic psychological needs decreases as PTSD symptoms increase in satisfaction of basic psychological needs.

**Table 4.** Correlation Analyzes of the group with PTSD Symptoms

| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IES-R-Total | 1 | .58 | .44 | .55 | .52 | .47 | .46 | .37 | .35 | .50 | -.40 | -.33 | -.32 |
| GTIO-Total | | | .80 | .79 | .83 | .78 | .76 | .47 | .76 | .43 | -.45 | -.43 | -.46 |
| Devaluation of Others | | | | .64 | .64 | .61 | .50 | .80 | .21 | .36 | -.30 | -.28 | -.27 |
| Comfort Seeking | | | | | .59 | .60 | .46 | .25 | .67 | .37 | -.27 | -.26 | -.29 |
| Irrational Beliefs to Approval | | | | | | .63 | .66 | .37 | .58 | .30 | -.43 | -.43 | -.38 |
| Irrational Beliefs to Achieve | | | | | | | .48 | .19 | .66 | .37 | -.23 | -.22 | -.18 |
| Self-Devaluation | | | | | | | | .42 | .39 | .34 | -.49 | -.48 | -.45 |
| Rationality | | | | | | | | | .50 | .33 | -.51 | -.45 | -.57 |
| Justice Expectation | | | | | | | | | | .31 | -.23 | -.23 | -.21 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Negative Dimension | | | | | | | | | | | -.33 | -.30 | -.31 |
| The Need for Autonomy | | | | | | | | | | | | .82 | .73 |
| The Need for Relatedness | | | | | | | | | | | | | .79 |
| The Need for Competence | | | | | | | | | | | | | 1 |

For the group without PTSD symptoms, it was found that there was a weak positive correlation between the total score of IES-R and the total score of GTIO-SF and its sub-dimensions "devaluation of others", "irrational beliefs of achievement", "expectation of justice" and "negative mood". When the relationship between STS and "autonomy", "relatedness" and "competence", which are sub-dimensions of basic psychological needs satisfaction, was examined, the direction of this relationship was found to be negative (Table 5). In THE participants without PTSD symptoms, no significant correlation was found between the total scores of IES-R and the sub-dimension of the GTIO-SF scale, “comfort seeking”, “irrational beliefs of approval” and “rationality”.

**Table 5.** Correlation Analyzes of the group without PTSD Symptoms

| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IES-R-Total | 1 | .30 | .29 | .13 | .16 | .21 | .23 | .11 | .22 | .37 | -.21 | -.29 | -.23 |
| GTİO-Total | | | .72 | .70 | .75 | .62 | .64 | .29 | .74 | .28 | -.17 | -.07 | -.03 |
| Devaluation of Others | | | | .50 | .45 | .26 | .35 | .03 | .64 | .29 | -.03 | -.03 | -.10 |
| Comfort Seeking | | | | | .47 | .36 | .23 | .01 | .41 | .09 | -.03 | -.11 | -.06 |
| Irrational Beliefs to Approval | | | | | | .32 | .65 | .35 | .40 | .16 | -.21 | -.06 | -.09 |
| Irrational Beliefs to Achieve | | | | | | | .32 | .12 | .55 | .10 | -.05 | -.02 | -.08 |
| Self-Devaluation | | | | | | | | .39 | .23 | .18 | -.34 | -.15 | -.28 |
| Rationality | | | | | | | | | -.09 | .24 | -.44 | -.33 | -.41 |
| Justice Expectation | | | | | | | | | | .31 | -.23 | -.23 | -.21 |
| Negative Dimension | | | | | | | | | | | -.17 | -.10 | -.15 |
| The Need for Autonomy | | | | | | | | | | | | .66 | .75 |
| The Need for Relatedness | | | | | | | | | | | | | .61 |
| The Need for Competence | | | | | | | | | | | | | 1 |

Multiple Linear Regression Analysis was applied to evaluate the effect of the PTS symptom level variable in the study on the irrational beliefs, mood and basic psychological needs variables for the group with PTS symptoms (Table 6). In the regression analysis performed between the dependent variable of PTS symptoms level and other variables, it has been determined that the GTIO-SF-total score showed a high level of PTS symptoms and positive outcome ($p <$ .01, $B$: .272, $t$:2,01); GTIO-SF-comfort seeking score showed a high level of PTS symptoms and positive outcome ($p <$ .05, $B$: .277, $t$: 2,34); TPIO-autonomy need score affects the level of PTS symptoms highly and negatively ($p <$ .05, $B$: -.217, $t$: -1,89), and that these variables explain this effect with a rate of 38% ($R^2$: 0.38).

**Table 6.** Results of Regression Analysis Conducted to Examine the Effects of General Attitudes and Beliefs Scale Short Form Total Score, Comfort Seeking Subdimension Scores and Autonomy Subdimension Scores of the Basic Psychological Needs Scale on the Level of PTSD for the group with Symptoms of PTSD

| **Variables** | **T** | **B** | **P** | **R** | **$R^2$** |
|---|---|---|---|---|---|
| GTIO Total | 2.01 | .272 | .047* | 62.3 | 38.8 |
| GTIO-Comfort Seeking | 2.34 | .277 | .027* | | |
| TPIO-The Need for Autonomy | -2.17 | -1.89 | .032* | | |

**p<0.01, p<0.05*.

## Discussion

The cognitive model of PTS symptoms focuses on individuals' reactions during and after the trauma, suggesting an emphasis on negative self-assessments. These assessments may include beliefs about the individual and the outside world, such as "I am inadequate", "the world is a dangerous place", "the same thing will happen to me again" (Kleim et al., 2011). In our study, the fact that the scores the individuals with PTSD symptoms obtained from the GTIO-SF self-devaluation sub-dimension were statistically significantly different in comparison to the individuals without PTS symptoms, and that this difference points to more irrational beliefs with those with PTS symptoms, has proven consistent with the literature findings. At the same time, the knowledge that individuals with strong PTSD symptoms have very high levels of irrational beliefs compared to those who are to reported to have mild PTSD supports the finding of our study that the scores of individuals with PTSD symptoms on the "irrationality" sub-dimension are statistically significantly different (Hyland et al., 2014).

Irrational beliefs can be observed as a catalyst for emotional discomfort as well as issues in interpersonal relationships. Individuals subjected to traumatic events may experience difficulties in interacting in close social relationships, the lack thereof could cause a failure in preventing or reducing the development of interpersonal dysfunction and PTSD symptoms (Nietlisbach & Maercker, 2009). In our study, it was observed that the scores of individuals with PTSD symptoms in the "devaluing others" sub-dimension were statistically significantly different from individuals without PTSD symptoms. In this case, it can be inferred that individuals with PTSD symptoms experience deterioration in interpersonal relationships.

Social support, collective sharing, and empathy have an important place in the recovery process of traumatized individuals. Individuals with PTSD should have the belief that their suffering will not be overlooked, but will instead be fully recognized, and that their anger as well as expectations for justice are no wrong, inadequate, or illegitimate. The restorative justice of society in healing the wounds of traumatic events, and the establishment of a justice system that focuses on the needs of the victim accelerates recovery (Botcharova, 2001). The fact that the scores obtained by the participants with PTSD symptoms in the study for the "expectation of justice" sub-dimension were statistically significantly higher compared to individuals without PTSD symptoms, is in line with the literature.

Negative mood is an important characteristic feature in the clinical and non-clinical manifestation of PTSD. The fact that the PANAS total scores of the participants with PTSD symptoms and the scores they got from the "negative mood" sub-dimension were statistically significantly different from individuals without PTSD symptoms can be interpreted as individuals with PTSD symptoms were more under the influence of negative emotions and had difficulty in reducing their effect (Seligowski et al., 2016). It has been suggested that PTSD is a risk and maintenance factor associated with difficulties in emotion regulation (Miron et al., 2016). Weakness in emotion regulation has been stated as a risk and maintenance factor for various psychological disorders. Different aspects of emotional regulation, i.e. experiential avoidance, rumination, and thought suppression, show a high proximity with the strongest associations of PTSD symptoms (Ehring & Quack, 2012). PTSD symptoms have been associated with difficulties in regulating negative emotions, greater use of suppression, and less use of cognitive change strategies to reduce the impact of negative emotions (Shepherd & Wild, 2014).

Difficulties in emotional functions as well as interpersonal relationships of individuals with PTSD and negative affect were found to be the most consistent predictors (Monson et al., 2004). Difficulty in recognizing, distinguishing and verbalizing emotions, as well as limitation in daydreaming are often tightly associated with post-traumatic stress disorder. In addition, it was reported that believing that life is meaningful, having a purpose, high social support, and high positive affect are important barriers to the development of PTSD (Feder, et al., 2003). Zakiei et al. (2014), who determined that there is a significant relationship between mental disorders and irrational beliefs and negative affect, stated that positive affect has a significant negative relationship with mental disorders. Difficulties in emotional functions and interpersonal relationships of individuals with PTSD and negative affect were found to be the most consistent predictors. PTSD symptom level is affected by individuals' negative affect, negative thoughts about self and the world, and autonomy levels; low level of autonomy exhibits a positive and significant relationship with negative affective experiences about the world after trauma (Kolts et al., 2004). The idea that autonomy can be used to predict the development of PTSD symptoms is supported by the results of the research (Boduszek et al., 2013). Among the findings of our study, that which the TPIO

total scores of individuals without PTS symptoms and their scores of "autonomy", "competence" and "relatedness" sub-dimensions differ significantly in favor of the participants without PTSD symptoms compared to the participants with PTS symptoms, is in line with the literature findings. In respect of the information obtained from the literature and related research findings, it can be inferred that individuals without PTS symptoms have more satisfaction in meeting their basic psychological needs, and this satisfaction may be a preventive factor in developing PTSD.

Moreover, in similarity to the literature findings, the participants with signs of PTSD symptom in this research have proven fairly positive regarding their IES-R total score and GTIO-SF total score, as well as the score of sub-dimensions of IES-R and GTIO-SF, such as "irrational beliefs of devaluation of others", "comfort seeking", and "approval", “irrational beliefs about achievement” and “self-devaluation”. On the other hand, it is seen that there is a weak positive relationship with the sub-dimensions of "rationality" and "expectation of justice" for the same participants. For the participants without TSS symptoms, the IES-R total score and GTIO-SF total score as well as the sub-dimension score of these, namely “devaluation of others”, “expectation of justice”, “irrational beliefs of achievement”, “devaluation of oneself”, have proven a weak positive response to the findings for the participants, while it was also determined that there was no significant connection with the aforementioned sub-dimensions of "rationality", "comfort seeking", "irrational beliefs of approval". These findings are consistent with the literature.

Studies in the literature show that negative affect is strongly associated with IES-R. However, since negative affect also represents a very encompassing feature, it has been stated that the very situation may occur in various clinical populations regardless of the nature of the traumatic event (Shapinskyn et al., 2005). Similarly in this study, it was found that there was a weak positive correlation between the IES-R total score and the total score of the PANAS scale, not to mention, a moderate positive proximity between the former and "negative mood", one of the sub-dimensions of the PANAS scale. When the findings of the participants without TSS symptoms were examined, no significant correlation was found between the IES-R total score and the PANAS total score, except for a weak and positive proximity between the IES-R score with the sub-dimension of the PANAS scale, i.e. the “negative mood” scale. Consequently, it is discovered that the findings obtained are in parallel with the literature.

When the results of the regression analyzes, which constitute the last stage of the research findings, are examined, it is found that the "general attitudes and beliefs" and "comfort seeking" scores in the group with PTSD symptoms are positive, whereas the scores of the "autonomy need" dimension, which is one of the basic psychological needs, have a high and negative effect on the PTSD symptom level, the predictor variables of which seemingly trigger this effect with a rate of 38%.

In the literature review, no studies were found showing the prediction of PTSD symptoms by general attitudes and beliefs and basic psychological needs. However, studies indicating that irrational beliefs indirectly predict the symptoms of PTSD, and that there is a significant correlation between basic psychological needs and irrational beliefs in the prediction of negative mood, indirectly support the results of the relevant study (Hyland et al., 2013).

There are some limitations of the research: when the demographic characteristics are examined, the gender distribution of the participants in the sample is not balanced and the number of women is high; socioeconomic level is stated by most individuals as lower-middle and upper-middle; the selection of the participants from Istanbul sample can be considered as a limitation. In addition, the unbalanced distribution of participants with and without PTSD symptoms can be considered as another limitation. It is seen that there are more female participants especially among the participants who show symptoms of PTSD. The low number of male participants can be explained by cultural factors as well as individual psychological factors such as avoidance and confrontation. Providing these distributions in a balanced way in future research may increase the generalizability of the studies. Due to the use of self-report scales, the fact that participants may have given biased answers while evaluating the results can be considered as a further limitation in terms of validity. The fact that the scales were presented to the participants through both online research sites and face-to-face participation in the data collection process may be a confounding variable in the diversity in the answers to the questions.

In addition to these limitations, the research results have strengths and contributions to the literature. Studies on the level of PTSD symptoms and irrational beliefs in the non-clinical population have been examined abroad, but such study has yet to be conducted in Turkey. Therefore, while presenting a comprehensive model of the level of PTSD symptoms, this study draws attention to the protective role of irrational beliefs in PTSD symptoms, and also shows how the irrational beliefs, mood, and satisfaction of basic psychological needs differ in participants with and without PTSD symptoms. Comparing the two groups is one of the strengths of the research.

In this study, the correlation between PTSD symptoms and irrational beliefs, basic psychological needs and mood was analyzed. The results of the research show that with the increase in the PTSD symptom level of the individuals, irrational beliefs and negative affect also increase. Similarly, it is discovered that positive affect increases with the decrease in PTSD symptoms. In addition, the results of the research point out that the satisfaction of basic psychological needs and positive affect have a protective effect on individuals who have experienced traumatic experiences. It is known that individuals whose psychological needs can be met is a concept that provides satisfaction in their personal processes and interpersonal needs. It is inevitable that there is a preventive factor even for PTSD, especially when it is taken into account that individuals whose psychological needs cannot be met or who are blocked experience serious psychological disorders. Research findings show that the most effective psychological need in PTSD symptoms is the need for autonomy, which

provides self-organization and approval of one's behavior.

When the results of the study are evaluated as a whole, the following stands out to be particularly important in community mental health policies: There may be many traumatic experiences that can be defined olarge to small scales in individuals' lives. However, people may be equipped with the necessary information to identify whether or not what they are experiencing is trauma. In this context, providing psychoeducation to individuals about trauma and its effects can readily be considered crucial in terms of preventive public health. The correlation between trauma and many serious pathologies is found in domestic and international studies. Based on this knowledge pointed out by scientific data, besides psychoeducation for people who have had traumatic experiences, it also becomes vital to determine individual preventive factors after traumatic events as well as to promulgate individual/group interventions. Considering the preventive factor of emotion regulation skills in challenging life events, it is crucial to revise the programs developed in this direction. In the proposed programs, it is predicted that providing individuals with a logical and consistent thinking system will increase the functionality of the interventions. It should also be ensured that the accessibility of individuals to individual or group intervention support programs after traumatic experiences is increased. In addition to these, when evaluated in a cultural context, it is believed that creating a family and school environment where children's psychological needs are met and their emotion regulation skills are developed will be conducive to promoting community mental health and self-development on preventive factors.

## Declarations

**Ethics Approval and Consent to Participate**
This study was approved by Maltepe University Ethics Committee's 2020/06-02 Decision.
**Consent for Publication**
Not applicable.

**Availability of Data and Materials**
Not applicable.

**Competing Interests**
The author declares that no competing interests in this manuscript.

**Funding**
Not applicable.
**Authors' Contributions**
EY, contributed to the design of the research, the creation of the methodology, the review of the datasets, the literature reading, the writing and presentation of the article. CK, Contributed to data collection and analysis, literature reading, writing and presentation of the article. All authors have read and approved the final article.

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