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# The Effects of Spiritual Well-Being and Coping Skills of the Kahramanmaraş Earthquake Survivors on Trauma

Kahramanmaraş Depremzedelerinin Spiritüel İyi Oluş ve Başa Çıkma Becerilerinin Travma Düzeyleri Üzerine Etkileri

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## Abstract

The Kahramanmaraş earthquake, which occurred on 6 February 2023 caused traumatic effects on several people due to its magnitude, the width of the area it impacted and the degree of destruction it caused. In addition to studies investigating trauma symptoms in Kahramanmaraş earthquake survivors, no study on spiritual well-being has been published yet. The main purpose of this study is to examine the effects of earthquake survivors' spiritual well-being levels and coping skills on posttraumatic stress disorder (PTSD) symptoms. The research was conducted based on the relational survey model. The population of the study consists of students who

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were affected by the earthquake and who currently study in KKTC. The study used a convenience sampling method with 400 participants aged 18 and over. Data collection tools included a Personal Information Form, the Spiritual Well-Being Scale, the Coping Attitudes Assessment, and the Post Traumatic Stress Disorder Short Scale. The results show a positive and significant relationship between spiritual well-being and coping attitudes, indicating that coping attitudes increase with higher levels of spiritual well-being. Additionally, a positive relationship was found between spiritual well-being and PTSD symptoms. Women reported higher self-help scores, while men exhibited higher avoidance scores. The study also revealed with those experiencing loss reporting higher PTSD levels. that the participants' own injury status did not have a significant relationship with their PTSD levels. Therefore, it is recommended to develop programs to enhance the spiritual well-being of earthquake survivors. Steps can be taken to increase the level of spiritual well-being to strengthen coping skills.

**Keywords:** *Kahramanmaraş earthquake, spiritual well-being, coping, posttraumatic stress*

## Öz

Travmatik olaylar, bireyi etkileyen, süregelen yaşamın dışında kalan, kişinin olaylarla başa çıkma yeteneğini aşan ve kişide yoğun stres kaynağı yaratan olaylardır. 6 Şubat Kahramanmaraş depremi de sarsıntının şiddeti ve yol açtığı yıkım nedeniyle birçok kişide travmatik etkiye neden olmuştur. Depremzedelere yönelik travma belirtilerini araştıran çalışmaların yanında, spiritüel iyi oluş konusunda henüz bir çalışma yayınlanmamıştır. Bu çalışmanın temel amacı, depremzedelerin spiritüel iyi oluş düzeyleri ile baş etme becerilerinin travma sonrası stres bozukluğu belirtileri üzerindeki etkilerini araştırmaktır. Araştırma, ilişkisel tarama modeli esas alınarak gerçekleştirilmiştir. Araştırmanın evreni, 6 Şubat 2023 tarihinde meydana gelen depremi Kahramanmaraş, Adıyaman, Hatay, Gaziantep, Malatya, Kilis, Diyarbakır, Şanlıurfa, Elazığ, Adana, Osmaniye, Kayseri, Niğde, Bingöl, Tunceli, Batman ve Mardin illerinde yaşamış olan, depremden etkilenmiş ve şu an Kuzey Kıbrıs Türk Cumhuriyeti'nde ikamet eden ve öğrenim gören öğrencilerden oluşmaktadır. Araştırmanın örneklemi ise 18 yaş ve üzeri 400 bireyin uygun örnekleme yöntemiyle seçilmesiyle oluşturulmuştur. Veri toplama araçları olarak Kişisel Bilgi Formu, Spiritüel İyi Oluş Ölçeği, Başa Çıkma Tutumlarını Değerlendirme ve Travma Sonrası Stres Bozukluğu Kısa Ölçeği kullanılmıştır. Sonuçlar, manevi iyi oluş ile başa çıkma tutumları arasında pozitif ve anlamlı bir ilişki olduğunu göstermekte, manevi iyi oluş düzeyi arttıkça başa çıkma tutumlarının da arttığını ortaya koymaktadır. Ayrıca, manevi iyi oluş ile TSSB semptomları arasında pozitif bir ilişki bulunmuştur. Kadınlar daha yüksek kendine yardım puanları bildirirken, erkekler daha yüksek kaçınma puanları sergilemiştir. Çalışma aynı zamanda kayıp yaşayanların daha yüksek TSSB seviyeleri bildirdiğini ortaya koymuştur. Katılımcıların kendi yaralanma durumlarının TSSB seviyeleri ile anlamlı bir ilişkisi bulunmamıştır. Bu nedenle, depremzedelerin spiritüel iyi oluşunu artırmaya yönelik programların geliştirilmesi önerilmektedir. Spiritüel iyi oluşun, bireylerin travma sonrası stresle başa çıkma yet-

eneklerini güçlendirdiği göz önünde bulundurularak, meditasyon, mindfulness ve manevi danışmanlık gibi uygulamaların önerilmesi uygun olacaktır.

**Anahtar sözcükler:** Kahramanmaraş depremi, spiritüel iyi oluş, baş etme, travma sonrası stres

## Introduction

Traumatic incidents are events which occur outside of daily life and they profoundly affect individuals by overwhelming their coping abilities. These events often lead to intense stress (Dai et al., 2016). Examples include natural disasters, personal attacks, rapes, wars, or witnessing the death of a loved one (Hong & Efferth, 2016). The American Psychiatric Association (APA, 2022) categorises trauma into three main types in *The Diagnostic and Statistical Manual of Mental Disorders* (DSM-5): intentional harm (war, terrorism, rape), unintentional harm (accidents, fires), and natural disasters (earthquakes, floods, etc...). For an event to be traumatic, it must threaten a person's life, his or her physical or mental integrity, and their worldview (Farooqui et al., 2017). This threat can undermine feelings of safety and self-worth, and challenge beliefs about the world and others (Levine, 2015). Consequently, post-traumatic stress disorder (PTSD) can arise, marked by intense emotions and psychological distress following a significant life event (Özgen & Aydın, 1999). Trauma experiences are common (Galea et al., 2005).

The Disaster and Emergency Management Authority (Afet ve Acil Durum Yönetimi Başkanlığı-AFAD) reported two earthquakes of magnitudes 7.7 and 7.6 that occurred in Kahramanmaraş on 6 February 2023 (2023). According to this information, they affected many provinces of Türkiye, including Adıyaman, Hatay, Gaziantep, and others, over an area of 108,812 km<sup>2</sup>. These events led to additional provinces being declared disaster areas. As a result, residents in this region may have developed PTSD symptoms, which can persist over time. Symptoms of PTSD can include re-experiencing traumatic events and hyperarousal (Hacıoğlu et al., 2002). The severity and frequency of these symptoms can vary based on individuals' coping skills (Feder et al., 2013). This study may assist clinicians in creating effective interventions for PTSD. Understanding the impact of spiritual well-being and coping skills on PTSD symptoms can help tailor therapeutic approaches to meet individual needs. In clinical practice, it is crucial to develop strategies that support coping with trauma through spiritual resources.

One of the important factors affecting the level of stress is how individuals perceive and cope with events. Coping is defined as managing and controlling stressors (Wresniewski & Chylinska, 2007). How people interpret the situations they encounter and how they react to these situations can cause stress to decrease or increase (Demirtaş, 2007). Dressler (1985) described it as cognitive and behavioural effort to mitigate stress. The intense stressors arising from experiences such as loss of property and/or loved ones, collapse, loss of a limb, or fear of not surviving emphasise the importance of effective coping strategies. Individual coping skills can vary due to personal differences in event evaluation. One person may experience negative emotions in response to a traumatic event, while another may not (Cüceloğlu, 1998). Social support, financial stability, and quality leisure time can enhance coping, while loneliness and fear of ostracism can hinder it (Baltaş & Baltaş, 2000).

Coping styles fall into two categories: emotion-focused and problem-focused. Emotion-focused coping aims to change emotional perceptions, while problem-focused coping seeks to address the source of stress (Brandtstädter & Renner, 1990). Further classifications include self-confident, optimistic, helpless, submissive, and social support-seeking approaches (Duru & Gültekin, 2021). The self-confident approach involves logical problem-solving, while the optimistic approach maintains a calm and realistic perspective. The helpless approach relies on supernatural support, and the submissive approach avoids problem-solving efforts. Seeking social support involves sharing problems with others (Bozdağ, 2015). The choice of coping approaches can impact overall well-being (Mayordomo, 2021). It can be said that an individual's belief in supernatural support, in other words spirituality, after natural disasters is an important factor in making sense of the event and coping with it.

Although often 'spiritualism' is perceived in relation to religion, it is a concept that has a much wider scope since the early periods of human history. In addition, scientific research in this field has accelerated in the last 150 years (Suri & Rao, 2014). Turan (2013) notes that religious diversity and new movements indicate that religion remains influential in society. Despite the limited literature on spiritualism in Türkiye, interest in spiritual movements has intensified (Cengiz et al., 2021). Since the late twentieth century, well-being has gained traction in behavioural sciences and psychology. Although widely studied, the concept remains partially defined and varies across contexts (Karataşoğlu, 2019). In positive psychology, well-being focuses on enhancing mental health and understanding personality traits (Fredrickson, 2001). It encompasses subfields like subjective well-being (Çağış, 2013), psychological well-being (Gönültaş & Karataş, 2023), and ontological well-being (Tunç, 2021). This study specifically addresses spiritual well-being, defined as living a spiritually healthy and fulfilling life (Gencer et al., 2021). Generally, spiritual well-being emphasises self-discovery, inner peace, and positive emotions like gratitude and forgiveness (Kaplan & Beydağ, 2023). It can involve practices like meditation, prayer, and yoga (Yılmaz, 2019) and include self-improvement activities. A crucial aspect of spiritual well-being is confronting life's profound questions, such as those regarding death and purpose (Nurkan, 2020). In the literature of other countries, there are studies that have investigated the effects of spiritual well-being on individuals' ability to cope with traumatic situations (Ramadan, Kheirallah, Saleh, Bellizzi, & Shorman, 2022; Slater, Bordenave & Boyer, 2015; Wortmann, Park, and Edmondson, 2011). In the Turkish literature, spiritualism is a subject that has been analysed from different perspectives in Türkiye's history, which has been home to many different religions and beliefs (Cengiz, Küçükural & Gür, 2021). However, it is seen that these studies are generally within the framework of faith, secularism, liberalism, and beliefs in nature. It has started to be researched together with the field of psychology in the last 20 years. When the studies in Türkiye were analysed, it was seen that some studies addressed different issues such as depression (Kutlu & Demir, 2022), narcissism (Kardaş, 2017), and psychological resilience (Ekşi Boyalı & Ümmet, 2019) with spirituality. According to a study that highlights the relationship between spirituality and trauma, researchers found out that individuals with high levels of spirituality had higher post-traumatic growth (Uğurluoğlu & Erdem, 2019).

After the 6 February 2023 earthquake, although research on trauma has started (Akay, Oğuzhan & Güdücü Tüfekçi, 2024; Karabacak Çelik, 2023), there is no study on specific spiritual well-being. For this reason, it is thought that this study will provide important information about how earthquake victims make sense of the traumatic event they experienced. For individuals with PTSD, achieving inner peace can be challenging. However, spiritual practices may help alleviate symptoms. For instance, meditation and prayer can reduce stress (Mikaelli & Eyni, 2022). Spiritual beliefs can foster feelings of forgiveness and gratitude, enabling healthier responses to stress (Kim & Kim, 2019). Overall, there may be a significant relationship between spiritual well-being, PTSD, and coping styles among earthquake survivors, which this study aims to explore. The increase in tendencies and behaviours towards spiritualism and religious beliefs in Türkiye in the last two decades made us think about the perspectives of the Kahramanmaraş earthquake survivors on this issue. Therefore, this study aims to investigate how spiritual well-being and coping skills of earthquake survivors affect PTSD symptoms. The relationship between the mentioned variables and their prediction levels will also be analysed in the study.

### 1. Methodology and research model

This study is based on the relational survey model. The relational research model is a research method frequently used in social sciences. This model is used to explain the relationships between many variables and focuses on examining the nature, direction, and strength of these relationships (Babbie, 2016).

**Table 1:** *Distribution of Participants According to Demographic Characteristics*

		n	%
Gender	Man	189	47,3
	Woman	211	52,8
Marital Status	Single	282	7,5
	Married	118	29,5
Education Level	High school or below	80	2,0
	University	231	57,8
	Postgraduate	89	22,3
Being a victim of the earthquake before 6 February 2023	Yes	132	33,0
	No	268	67,0
Got injured in the earthquake?	Yes	108	27,0
	No	292	73,0
The death of a relative in the earthquake	Yes	215	53,8
	No	185	46,3
Losing home in the earthquake	Yes	109	27,3
	No	291	72,8

## 2. Data Collection Tools

The study used a variety of data collection tools, including demographic information form, Spiritual Well Being Scale and Posttraumatic Stress Disorder Symptoms Scale - Self-Assessment (PTSD-SS-SS).

The demographic information form used in the study includes questions on participants' gender, age, education level, the city where they experienced the earthquake, and the situations they encountered as a result of the earthquake. Second, we used the Spiritual Well-Being Scale created by Ekşi and Kardaş (2017), is a 5-point Likert scale comprising 29 items. The scale assesses individuals' personal, transcendental, environmental, and social aspects, with three sub-dimensions: Harmony with nature (e.g. I feel that nature should be respected), anomie (e.g. I feel a sense of dissatisfaction with life), and transcendence (e.g. Being connected to a spiritual power gives me confidence). The scale's Cronbach Alpha internal consistency was .89, indicating reliability and validity. In this study, the Cronbach Alpha value was found to be .88. A high score in each sub-dimension indicates that the individual has the characteristic evaluated by the relevant sub--dimension. The scale also gives a total well-being score.

Third, the study relied on coping attitudes assessment scale Developed by Carver et al. (1989) and revised by Zuckerman and Gagne (2003), 4-point Likert scale contains 40 items across five factors which are self-help (e.g. I take time to express my feelings), approach (e.g. I concentrate with all my strength on what I am doing), adaptation (e.g. I try to be optimistic in every situation), abstention-avoidance (e.g. I pretend that the situation that has arisen does not really happen), self-punishment (e.g. I am constantly preoccupied with what is troubling me). The scale was adapted into Turkish by Dicle and Erşanlı (2015), resulting in 32 items and five factors. The Cronbach Alpha for this version was .97. In this study, the Cronbach Alpha value was calculated as .83. The highest score that can be obtained from the scale is 160 and the lowest score is 40. A higher score on the scale means that the person has a stronger coping attitude.

Last, we used post-traumatic stress disorder symptoms scale - self-assessment (ptsd-ss-ss), The PTSD-SS-SS, developed by Foa et al. (1997) and adapted into Turkish by Aydın et al., consists of 17 items scored from 0 to 3. The scale is a self-assessment scale that aims to screen for symptoms of posttraumatic stress disorder. The scale has 3 sub-scales which are Avoidance (e.g. inability to remember an important part of the traumatic incident), live over (e.g. having bad dreams about the traumatic event), overexcitation (e.g. difficulty falling asleep or staying asleep). The overall internal consistency score is .90, with subscale values ranging from .72 to .82. The reliability and validity of the Turkish adaptation were deemed sufficient (Aydın et al., 2012). In this study, the Cronbach Alpha value was calculated as .89. Scores of 13 or higher indicate the possibility of PTSD.

### 3. Research procedure

As the first step of the research, the ethics committee permission dated 31.01.2024 and numbered EKK23-24/005/07 was obtained by the Scientific Research and Publication Ethics Committee of Cyprus International University and the data were collected between March 2024 and April 2024. University students who experienced the 6 February Kahramanmaraş earthquake zone were included in the study. Since we planned to compare participants' previous exposure of natural disasters, those with a background of natural disasters were not excluded from the study. Prior to the research, we shared a consent form with the participants underlining that raking part in the research was voluntary and informed the participants. The data collection process, which developed in face-to-face interviews, lasted 15-20 minutes.

### 4. Data analysis and results

Data analysis was conducted using SPSS 26.0. Statistical measures such as mean, frequency, standard deviation, and minimum-maximum values were calculated. Before analysis, the normality of the score distributions for the Spiritual Well-Being Scale, Coping Attitudes Scale, and PTSD Scale was tested. The kurtosis and skewness ratios for all variables fell between -2.5 and +2.5, indicating normal distribution (Field, 2018). Consequently, parametric test methods were employed for data analysis.

The main purpose of this study was to investigate the effects of earthquake survivors' spiritual well-being levels and coping skills on posttraumatic stress disorder symptoms. For this purpose, statistical analysis methods such as independent t-test and ANOVA were used to compare the participants' scores on the Spiritual Well-Being Scale, Coping Attitudes Scale and Posttraumatic Stress Disorder Scale according to sociodemographic variables.

The analysis of scores from the Spiritual Well-Being Scale and Coping Attitudes Scale, comparing results by gender using independent samples t-tests (Table 2). Participants' total scores on the Spiritual Well-Being Scale ( $t = -.494$ ;  $p > .05$ ) and its subscales—transcendence ( $t = -.542$ ;  $p > .05$ ), harmony with nature ( $t = -.178$ ;  $p > .05$ ), and anomie ( $t = .009$ ;  $p > .05$ )—did not show significant differences by gender. However, the self-help ( $t = -2.487$ ;  $p < .05$ ) and avoidance ( $t = 2.238$ ;  $p < .05$ ) subscale scores of the Coping Attitudes Scale differed significantly. Women reported higher self-help scores than men, while men had higher avoidance scores. The total scores for the Coping Attitudes Scale and the approach, adaptation, and self-punishment sub-dimension scores did not differ significantly by gender.



**Table 2:** Comparison of Spiritual Well-Being Scale and Coping Attitudes Scale Scores by Gender

Variables	Gender	n	M	SD	t	p
Transcendence Sub-Dimension	Man	189	54,85	14.295	-.542	.588
	Woman	211	55,55	11.42		
Harmony With Nature Sub-Dimension	Man	189	29,21	4.23	-.178	.858
	Woman	211	29,28	3.919		
Anomie Sub-Dimension	Man	189	19,9	5.334	-.009	.992
	Woman	211	19,91	5.578		
<b>Spiritual Well-Being Scale</b>	Man	189	103,96	16.863	-.494	.622
	Woman	211	104,74	14.574		
Self-Help Sub-Dimension	Male	189	14,78	3.739	-2,487	.013*
	Woman	211	15,73	3.891		
Approach Sub-Dimension	Male	189	21,04	3.627	.646	.519
	Woman	211	2,79	3.945		
Adaptation Sub-Dimension	Male	189	19,53	3.603	1,116	.265
	Woman	211	19,11	3.816		
Avoidance Subscale	Male	189	12,59	3.723	2,238	.026*
	Woman	211	11,76	3.675		
Self-Punishment Subscale	Male	189	14,57	4.41	-.452	.651
	Woman	211	14,76	4.084		
<b>Coping Attitudes Scale</b>	Male	189	82,5	11.716	.306	.760
	Woman	211	82,16	1.912		

\* $p < .05$

Table 3 shows the details of the independent samples t-test results for the comparison of Posttraumatic Stress Disorder Scale scores according to the status of losing a relative in the earthquake. We determined that there was a significant difference in the scores of the Posttraumatic Stress Disorder Scale between the participants who had lost a relative in the earthquake and the participants who had not ( $t=5.360$ ;  $p<.05$ ). Accordingly, participants who had lost a relative in the earthquake had higher PTSD scores than those who had not. In addition, we analysed the relationship between the PTSD levels of the participants and their injuries during the earthquake. As a result of the analysis, no statistically significant relationship was found.



**Table 3:** Comparison of Posttraumatic Stress Disorder Scores According to the Loss of a Relative in the Earthquake

Variables		n	M	SD	t	p
Losing Someone in the Earthquake	Yes	215	23,56	1,253	5,360	.000*
	No	185	18,41	8,724		
Get Injured	Yes	108	23,58	10,332	2,996	.067
	No	292	20,28	9,603		

\* $p < .05$ , \*\* $p < .01$

The Table 4 displays the Pearson correlation coefficients examining the relationships between the participants’ scores on the Spiritual Well-Being Scale, Coping Attitudes Scale, and Posttraumatic Stress Disorder (PTSD) Scale. There is a significant positive correlation between total scores on the Spiritual Well-Being Scale and the Coping Attitudes Scale ( $r = .397$ ;  $p < .01$ ), as well as with the self-help ( $r = .194$ ;  $p < .01$ ), approach ( $r = .299$ ;  $p < .01$ ), adaptation ( $r = .357$ ;  $p < .01$ ), avoidance ( $r = .213$ ;  $p < .01$ ), and self-punishment ( $r = .113$ ;  $p < .05$ ) subscales. This indicates that higher spiritual well-being scores are associated with higher coping attitudes scores.

**Table 4:** Relationships between Spiritual Well-Being Scale, Coping Attitudes Scale and Posttraumatic Stress Disorder Scale Scores

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Transcendence Sub-Dimension	r	1									
	p										
2. Harmony With Nature Sub- Dimension	r	,421**	1								
	p	.000									
3. Anomie Sub-Dimension	r	-.043	-.075	1							
	p	.395	.133								
4. Spiritual Well-Being Scale	r	,913**	,577**	,294**	1						
	p	.000	.000	.000							
5. Self-Help Sub-Dimension	r	,189**	,315**	-.122*	,194**	1					
	p	.000	.000	.014	.000						
6. Approach Sub-Dimension	r	,285**	,404**	-.113*	,299**	,313**	1				
	p	.000	.000	.024	.000	.000					
7. Adaptation Sub-Dimension	r	,328**	,402**	-.045	,357**	,373**	,583**	1			
	p	.000	.000	.368	.000	.000	.000				
8. Avoidence Sub- Dimension	r	,120*	.001	,330**	,213**	,124*	-.052	,169**	1		
	p	.016	.987	.000	.000	.013	.303	.001			
9. Self-Punishment Sub-Dimension	r	-.021	-.02	,391**	,113*	.036	-.08	-.015	,365**	1	

	p	.669	.696	.000	.023	.479	.112	.761	.000			
10. Coping Attitudes Scale	r	.299**	.369**	.161**	.397**	.623**	.588**	.702**	.547**	.476**	1	
	p	.000	.000	.001	.000	.000	.000	.000	.000	.000		
11. Posttraumatic Stress Disorder Scale	r	-.037	.054	.379**	.115*	.069	-.02	.04	.256**	.330**	.238**	1
	p	.457	.286	.000	.021	.17	.696	.425	.000	.000	.000	

\* $p < .05$ ; \*\* $p < .001$

When we examine the sub-dimensions reveals significant correlations between the transcendence sub-dimension of spiritual well-being and the self-help ( $r = .189$ ;  $p < .01$ ), approach ( $r = .285$ ;  $p < .01$ ), adaptation ( $r = .328$ ;  $p < .01$ ), and avoidance ( $r = .120$ ;  $p < .05$ ) subscales of coping attitudes. Additionally, there are strong positive correlations between the harmony with nature sub-dimension and the self-help ( $r = .315$ ;  $p < .01$ ), approach ( $r = .404$ ;  $p < .01$ ), and adaptation ( $r = .402$ ;  $p < .01$ ) scores. Conversely, the anomie sub-dimension has negative correlations with self-help ( $r = -.122$ ;  $p < .05$ ) and approach ( $r = -.113$ ;  $p < .05$ ), and positive correlations with avoidance ( $r = .330$ ;  $p < .01$ ) and self-punishment ( $r = .391$ ;  $p < .01$ ). As anomie scores increase, self-help and approach scores decrease, while avoidance and self-punishment scores increase.

A positive correlation exists between the total scores of the Spiritual Well-Being Scale and the PTSD Scale scores ( $r = .115$ ;  $p < .05$ ). However, there are no statistically significant correlations between PTSD and the transcendence ( $r = -.037$ ;  $p > .05$ ) and harmony with nature ( $r = .054$ ;  $p > .05$ ) subscale scores. In contrast, there is a significant positive correlation between anomie subscale scores and PTSD scores ( $r = .379$ ;  $p < .01$ ), indicating that higher anomie scores are associated with higher PTSD scores.

Last, a positive relationship is found between total scores on the Coping Attitudes Scale and PTSD scores ( $r = .238$ ;  $p < .01$ ). No significant correlations were observed between PTSD scores and the self-help ( $r = .069$ ;  $p > .05$ ), approach ( $r = -.02$ ;  $p > .05$ ), and adaptation ( $r = .04$ ;  $p > .05$ ) subscales. However, significant positive correlations exist between PTSD scores and the avoidance ( $r = .256$ ;  $p < .01$ ) and self-punishment ( $r = .330$ ;  $p < .01$ ) subscales. This suggests that as avoidance and self-punishment coping scores increase, PTSD scores also rise.

**Table 5:** Predictive Effect of Spiritual Well-Being Scale and Coping Attitudes Scale Scores on Posttraumatic Stress Disorder Scale Scores

Variable	B	Sh	$\beta$	t	p
(Fixed)	3,063	4,066		.753	.452
Spiritual Well-Being Scale	.015	.034	.024	.461	.645
Coping Attitudes Scale	.200	.047	.228	4,302	.000*
R=.239	R <sup>2</sup> =.057		F(2;399)=12,047		P<.01

Dependent Variable: PTSD Scale

Table 5 shows the statistical results of the regression analysis evaluating the predictive power of the Spiritual Well-Being and Coping Attitudes Scales on the Posttraumatic Stress Disorder (PTSD) Scale scores. Spiritual Well-Being Scale scores did not predict PTSD Scale scores in a statistically significant way ( $\beta = .015$ ;  $p > .05$ ). Coping Attitudes Scale scores positively predicted PTSD Scale scores ( $\beta = .200$ ;  $p < .01$ ). 5.7% of the change in the PTSD Scale scores of the participants is explained by the Spiritual Well-Being Scale and Coping Attitudes Scale scores.

## 5. Discussion

This study examined the effects of spiritual well-being and coping skills on PTSD symptoms among earthquake survivors, contextualizing the results within existing literature. We found that levels of spiritual well-being, including its sub-dimensions of transcendence, harmony with nature, and anomie, did not significantly differ by gender. This aligns with research by Gomez and Fisher, who also found no gender differences in spiritual well-being, and Rapson and John (2005), who reported balanced levels between genders. However, Yılmaz (2019) diverged from this trend, revealing that woman participants exhibited higher spiritual well-being than men. Other studies, such as those by Soysa and Wilcomb (2015) and Göçen (2019), indicated that women tend to have better psychological health than men. The variability in findings may be attributed to factors such as geographical location, cultural dynamics, and societal value systems.

We found a notable difference in gender with regard to the self-help and avoidance sub-dimensions of coping attitudes. Women reported higher self-help scores, while men exhibited higher avoidance scores. This reflects literature suggesting that women generally employ more positive coping strategies (Ai et al., 2003; Özcan, 2019). Studies conducted on 6 February earthquake among university students, it was found that stress levels of women were higher. This result was thought to be due to the fact that women can define and express the negative emotions they experience more easily than men (Akay, Oğuzhan & Güdücü Tüfekçi, 2024; Uzak & Yanardağ, 2024). According to Sağır (2014), women are more likely to use positive coping methods, while men tend to lean towards negative strategies. Özcan (2019) proposed that women's emotional structures may be more sensitive, necessitating greater support in coping with stress. Thus, these results may reflect gender roles and societal expectations, particularly in patriarchal contexts like Türkiye, where women are often tasked with fulfilling multiple roles (Acar, 2019).

The study also revealed significant differences in PTSD levels based on whether participants lost a relative in the earthquake, with those experiencing loss reporting higher PTSD levels. This finding corroborates prior research by Kurt and Gülbahçe (2019), highlighting the profound impact of personal loss on PTSD. Bullock, Haddow and Coppola (2016) stated that physical environmental incidents, injuries, deaths and financial losses that occur after a disaster can bring traumatic reactions. As a result of our study, it was seen that

the participants' own injury status did not have a significant relationship with their PTSD levels. At this point, it was thought that the participants may not have perceived their own injuries as traumatic in addition to death and other losses. It can be said that even if the spiritual well-being of the participants is strong, when it comes to a real loss, this well-being decreases considering the results in the anomie sub-dimension.

Furthermore, we identified positive correlations between spiritual well-being and coping attitudes. As spiritual well-being levels increased, so did coping attitudes, suggesting that spiritual resources may enhance psychological health. According to a study conducted immediately after the earthquake, it points to the importance of having positive resources such as hope and well-being for individuals to cope with post-traumatic symptoms (Karabacak Çelik, 2023). Previous studies (Ekşi & Kardaş, 2017; Karademir & Eryücel, 2023) affirm the importance of spiritual well-being in personal and social contexts. However, while a positive relationship between spiritual well-being and PTSD was found, it may be influenced by time, as initial attachment to spiritual resources could increase stress, whereas long-term engagement may bolster coping skills.

Notably, we found significant relationship between the anomie sub-dimension and PTSD levels. Increased anomie, characterized by social norm uncertainty, was associated with higher PTSD symptoms. This aligns with results indicating that traumatic events can disrupt daily routines and social connections, leading to isolation and existential questioning (Wood et al., 2018). In our study, it was found that the loss of a relative increased PTSD symptoms, whereas direct injury in the earthquake did not have a significant relationship with PTSD symptoms. In a similar study conducted with earthquake survivors (Uzak & Zubaroglu-Yanardağ, 2024), it was found that losing a relative and being trapped under rubble increased the level of traumatic stress. In two studies conducted in 2008 on the Wenchuan earthquake (Kun et al., 2009; Chan et al., 2011), loss of a relative (parent, friend, neighbour) in the earthquake was found to be associated with the rate of experiencing PTSD.

Interestingly, while coping attitudes positively predicted PTSD levels, the relationship was complex. Ineffective coping strategies, such as emotional avoidance, were linked to higher PTSD symptoms. Studies by Alshahrani et al. (2022) and Ime (2024) similarly found passive coping strategies correlated positively with PTSD symptoms. Lastly, the study indicated that spiritual well-being did not significantly predict PTSD levels, suggesting that its impact may not be as direct as previously thought. Conversely, coping attitudes were found to be significant predictors of PTSD severity, emphasizing the crucial role of coping strategies in managing traumatic experiences.

## 6. Conclusion and suggestions

This research highlights the intricate relationship between PTSD, spiritual well-being, and coping skills among survivors of the 6 February 2023 earthquake. The findings suggest that the adverse effects of the earthquake are closely linked to spiritual well-being and coping mechanisms. To mitigate these effects, multifaceted approaches are essential. Enhancing psychological support systems, incorporating practices like meditation and mindfulness, and providing spiritual counselling can yield positive outcomes. Additionally, psycho-education programs tailored to different age groups may bolster coping skills. Group psychotherapy sessions that encourage emotional expression and social support are particularly vital for individuals who have lost loved ones and feel socially isolated. Future longitudinal studies are recommended to explore the long-term impacts of such traumatic events on mental health and coping strategies. Although the effects of PTSD may occur in the long term, it should not be forgotten that the participants' stress levels related to the earthquake may have changed or that they may have received psychological support since the data of the study were collected one year after the earthquake.

The study was limited to university students studying in Northern Cyprus who were caught in the earthquake zone on 6 February. In this context, it is thought that collecting data from university students who stayed in the country after the earthquake and people at different educational levels who are not students and who have always lived there will both contribute to the literature and direct studies on earthquake victims.

**Research and publication ethics statement:** This is a research article, containing original data, and it has not been previously published or submitted to any other outlet for publication. The author followed ethical principles and rules during the research process. In the study, informed consent was obtained from the volunteer participants and the privacy of the participants was protected.

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