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The validity and reliability of the Turkish version of the psychological preparedness for disaster threat scale

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Abstract

The aim of this research was to investigate the validity and reliability of a Turkish version of the 26-item Australian Psychological Preparedness for Disaster Threat Scale (PPDTS). A cross-sectional study involving 530 university students and staff at Giresun University was conducted to establish the psychometric properties of the PPDTS. Content analysis, exploratory factor analysis, confirmatory factor analysis and Cronbach alpha values for reliability were used to analyse the data. Content analysis showed that one item needed to be dropped as it was not related to environmental threats to Turkish communities. The exploratory factor analysis indicated that 66% of the total variance was explained by three factors: (i) knowledge and management of the external situational environment, (ii) management of one's emotional and psychological response, and (iii) management of one's social environment. The confirmatory factor analysis showed acceptable overall goodness of fit for the three-factor model: CFI (0.908), RMSEA (0.074) for the 21 item scale. Cronbach's α coefficients of the subscales were 0.91, 0.93, and 0.83, respectively, while for the whole scale, it was 0.95. Four items from the original PPDTS were deleted in the course of the analyses. It was concluded that the Turkish version (PPDTS-T21) is a valid and reliable assessment tool for the evaluation of levels of psychological readiness for disaster threats to Turkish communities and will be useful in policy making for community preparedness for disaster events.

Keywords Natural disasters · Disaster preparation · Psychological preparedness · Mental preparedness

1 Introduction

The United Nations Office for Disaster Risk Reduction defines disaster as "A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more

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of the following: human, material, economic and environmental losses and impacts". (UNDRR, n.d.). Rapid onset natural disasters take two forms (McLennan, Bearman and Ryan, 2022): geophysical (earthquakes, landslides, volcanic eruptions and tsunamis) and weather-related (hurricanes, tornadoes, floods and wildfires). These often strike communities with little warning resulting in significant adverse human impacts, including death, injury and traumatic stresses. It has been observed that the number of weather-related disasters and the losses they cause have increased all globally due to the effects of climate change (McGee and Penning-Rowsell, 2023; IPCC, 2022). In addition, there are other natural disasters that develop more slowly such as droughts, famines and illness epidemics. The recent COVID-19 pandemic, which can also be considered as a climate change-related disaster, has had global repercussions and affected most countries in unprecedented ways.

Due to its geological, topographic structure and climatic characteristics, Turkey is located in a geographical location where several types of disasters, especially earthquakes, are experienced frequently. Turkey is among the countries that can be described as "high risk" in terms of earthquakes (AFAD 2018). Approximately 60% of the loss of life due to disasters in Turkey has resulted from earthquakes, and an earthquake that causes extensive loss of life and property occurs on average every five years (AFAD 2020a). The major earthquakes that caused damage and loss of life in Turkey since 1999 are as follows: 1999 Gölcük- Düzce earthquake 17,480 deaths (AFAD 2018); 2003 Bingöl earthquake 176 deaths (Aydan et al. 2003); 2011 Van earthquake 644 deaths (AFAD 2011); Elazig earthquake 38 deaths; and the 2020 Izmir earthquake 113 deaths (AFAD 2020b). In addition to earthquakes, other types of disasters such as landslides, floods, rockfalls and avalanches are also frequently experienced in Turkey. In 2021, 13,135 people were affected by the flood disaster in the Western Black Sea region (AFAD 2021). In 2021, severe storms struck Istanbul and Kocaeli in the Marmara region, resulting in injuries and substantial economic and financial losses. In 2021, 16 people lost their lives when numerous forest fires occurred in 54 provinces in the Mediterranean, Aegean, Marmara, Western Black Sea and Southeastern Anatolia Regions; hundreds of thousands of hectares of forests were burned and several settlements were destroyed (Varol 2021).

In the face of disasters of such magnitude, psychological preparation has become recognized as a vital component of community disaster preparedness alongside traditional approaches to physical or material preparation of households to survive disaster events (Agarwal et al. 2020; Zakour 2023). Disaster preparedness at the community level can be defined as personal protective behaviour shaped to protect individuals from unexpected, unpredictable situations that may have an adverse impact on their life and possessions. All disaster management frameworks and models emphasize the importance of being ready for unexpected circumstances (Suhaimi and Marzuki 2016). Historically, response agencies have concentrated attention on the physical or material preparations that need to be made in order to protect oneself and one's family from death or injury, and to avoid or minimize financial and economic loss (Malkina-Pykh and Pykh 2015; McLennan et al. 2020). Thus, most of the studies reported on disaster preparedness have focused on such physical or material preparations. More recently, disaster researchers have turned their attention to the importance of psychological, or mental, preparation in addition to physical and material preparation. Researchers including Clode (2010); Every, McLennan, Reynolds and Trigg (2019); Malkina-Pykh and Pykh (2013); Roudini et al. (2017); Suhaimi and Marzuki (2016); and Zakour (2023) have argued that psychological preparation for disaster threat is as important as physical/material preparation.

Researchers have suggested that psychological preparation consists of at least two broad mental dimensions. The first of these is the cognitive aspect, which mostly includes

accurate knowledge about the threat situation, possible adaptive reactions and the threat environment; the second is the emotional aspect, which includes self-awareness and emotional self-control. Research by Boylan and Lawrence (2020) supported this two-dimensional formulation in their Australian study about preparedness for wildfire threats and noted that most people experience anticipatory negative emotions such as stress, fear or anxiety to some extent about possible future disaster threats and these feelings can motivate them to act, take constructive preparations and thus lessen the danger. However, Boylan and Lawrence also emphasized that if these feelings become excessive, they will impair a person's cognitive functioning (such as risk perception, decision-making, attention, memory, and attentional focus), which in turn may have an adverse impact on adaptive behaviour during an actual threat event. The importance of this is that although physical/material preparations and plans against the threat of disaster are essential, cognitive awareness and coping with extreme emotional reactions in a threat situation become very important to implement survival plans effectively.

Being psychologically prepared for a disaster threat can thus help people cope with the stress of an emergency warning period and hazard impact, feel safer, be more controlled, and make better survival decisions. In addition, preparing individuals psychologically for the impact of disasters can help reduce adverse mental effects of disasters by protecting householders from harmful psychological distress and long-term mental health problems that may arise from the trauma of being involved in disasters (Roudini et al. 2017; Zakour 2023). Thus, psychological preparation before a crisis may help people predict, recognize, and control their emotions, leading to improved coping. The components of psychological preparation that must be included in a particular at-risk community setting should take into account the specific natural hazard threats likely to impact that community, as well as the practical and material local demands and difficulties, and the resources available. These elements must all be culturally acceptable. Therefore, research is needed to determine the psychological readiness of individuals in particular communities to face the kinds of disasters most likely to impact these communities.

The question arises: what instruments are available to policy makers and emergency response agencies to assess levels of psychological preparedness for disasters in particular communities? The few studies relating to mental aspects of disaster preparedness of Turkish residents (Inal, Altintas and Dogan, 2019; Sonmez and Gokmenoglu 2023; Yildiz and Yildrim, 2022) used the General Disaster Preparedness Belief Scale (Inal et al. 2018; Inal and Dogan 2018). The theoretical basis of the scale was the Health Behaviour Model (Glanz et al., 2008) and the scale assesses beliefs about aspects of response to disaster threat and does not measure the emotional self-awareness and management component of psychological preparedness for a disaster event identified by researchers as a key aspect (Boylan and Lawrence 2020; Every et al. 2019; McLennan et al. 2020). The measure developed by Boylan and Lawrence (2020) was developed specifically for Australian communities facing wildfires and thus has limited applicability to the natural hazard threat situation in Turkey, where the major threats historically have come from earthquakes, landslides and floods. A more general 26-item measure of psychological preparedness for disasters in northern Australian communities was developed by Zulch, the Psychological Preparedness for Disaster Threat Scale (PPDTS-26, Zulch 2019) and a preliminary inspection suggested that this measure was likely to prove suitable as the basis for a Turkish measure of psychological preparedness for disasters likely to impact Turkish communities. It was noted that a Russian-language version of an early (18-item, Zulch et al. 2012) version of the PPDTS had been developed by Malkina-Pykh and Pykh (2013); however, no details of the item-content were reported.

The aim of this study was to investigate the psychometric properties of the Psychological Preparedness for Disaster Threat Scale (PPDTS-26) and adapt it as needed in order to develop a measure of psychological preparedness for disasters appropriate for use in Turkey so as to investigate and promote psychological preparedness for future disaster events. The Results section of this paper report English language versions of the PPDTS-26 items. The final Turkish version of the measure is provided as an Appendix.

2 Method

2.1 Sample

This cross-sectional study was conducted among university students and staff at Giresun University, north-eastern Turkey, in May and June 2021. Participants' details are summarized in Table 1 of the Results section. The total number of study participants was 530, 323 women and 207 men. For studies involving scale development or adaptation, the data set for a confirmatory factor analysis (CFA) should be different from the data set for the exploratory factor analysis (EFA) as recommended by Schumacker and Lomax (2010). Accordingly, our data were randomly divided into two groups, one ($n = 265$) for the EFA and other ($n = 265$) for the CFA. For factor analysis, a sample size of 10 or more persons per scale item is considered desirable (Comrey 1988; Guadagnoli and Velicer 1988; Mac-Callum et al. 1999). The sample size was thus deemed sufficient in our study.

2.2 Measuring instrument

The participants were asked to complete an online *Google Forms* survey that asked about their demographic information and responses to a 25-item Turkish language version of the PPDTS—as noted below an item from the PPDTS-26 was deleted because it was deemed not

Table 1 Sociodemographic characteristics of the participants

Characteristics	Total Sample	
	N(M)	%(SD)
Gender		
Female	323	60.9
Male	207	39.1
Age		
18–25	412	77.7
26–35	68	12.8
36–45	46	8.7
46 and older	4	0.8
Marital Status		
Single	469	88.5
Married	61	11.5
Education levels		
Bachelor and below (students)	482	90.9
Master's and above (mostly staff)	48	9.1

to relevant to residents of Turkish communities. An 18-item version (PPDTS-18) had been first created by Zulch, Morrissey, Reser and Creed (2012) for use in Northern Australian communities. That measure was extended subsequently by Zulch (2019) to incorporate 26 items (PPDTS-26) in four subscales: *Knowledge and Management of the External Situational Environment* (13 items); *Management of one's Emotional and Psychological Response* (7 item); *Management of one's Social Environment* (3 item); and *Anticipatory Coping with Emotional Response* (3 items). Responses were made on 4-point Likert-type scales with response options 1=Not at all true of me; 2=Hardly true of me; 3=Moderately true of me; and 4=Exactly true of me. Zulch reported CFA model fit indices of: χ^2/df(395)=2.30, TLI=0.95, CFI=0.96, RMSEA=0.05. The Cronbach's alpha internal consistency values for the four subscales were 0.94, 0.90, 0.75, and 0.64, respectively, and 0.93 for the full scale.

2.3 Procedure

The study was approved by the ethics committee of Giresun University (No. 20/35.7) and permission was obtained from Hannah Zulch for adaptation of her PPDTS-26 scale. The scale was translated into Turkish with minor modifications to the content of some items to take into account that Turkish communities are notably at risk of earthquakes, landslides, flood, epidemic, and to a lesser extent wildfires, rather than the tropical storms and cyclones to which northern Australian communities are especially vulnerable. Then, it was translated back into English by language professionals. Two experts in disasters, who were proficient in both English and Turkish, were invited to check the accuracy of the forward and back translations of the items. Following this, five consultants were asked to evaluate the 26 items of the scale for appropriateness of content (Lawshe 1975). One item (I know what the difference is between a cyclone warning and a cyclone watch situation) was removed because the item content was irrelevant for Turkish communities. *Google Forms* was used as the online questionnaire platform. A pilot study was carried out with the final 25 item Turkish version of the PPDTS and the scale to verify that all of the items were readily understood by the participants.

2.4 Statistical Analyses

All analyses were carried out using the *IBM SPSS 26.0* and *IBM SPSS Amos 22* software. After the descriptive analysis was done, exploratory (EFA) and confirmatory (CFA) factor analyses were conducted to test the construct validity of the scale. Maximum Likelihood analysis as a factor extraction method with Varimax rotation method was used in the EFA. Items with factor loadings ≥ 0.40 were accepted (Tsai et al. 2015). In the CFA, p values less than 0.05 were considered statistically significant. Internal consistency of the scale and subscales was assessed by Cronbach's alpha, with 0.70 set as the criterion for internal consistency reliability (Hair et al. 2010).

3 Results

3.1 Characteristics of the participants

Demographic characteristics of participants from the 530 valid questionnaires are shown in Table 1; most of the participants were female (61%) and most (78%) were aged between 18–25. The mean age was 24 years (SD=6.5).

3.2 Construct validity analysis

With regard to EFA, the Kaiser–Meyer–Olkin (KMO) test was first used to assess if the sampling was adequate and Bartlett's test of sphericity was used check that the items could be used to determine structure. The KMO of the study was 0.937 which is greater than 0.5 (Field 2009) and Bartlett's test of sphericity was significant ($\chi^2 = 4886.669$; $p \leq 0.001$), showing that factor analysis would be suitable to implement.

As a result of the EFA analysis, a three factor structure was obtained. Item 1 was deleted because of low factor loading (< 0.40) and item 6 was deleted because of cross-loading. The remaining items and their loadings, together with factor eigen values and variance percentages, are shown in Table 2. The first factor comprised 10 items, the second factor 10 items, and third factor 3 items. In all, the three factors explained the 66% of the cumulative variance. A scree plot analysis confirmed the three-factor model solution (Fig. 1).

A CFA was then conducted to test the adapted three-factor model using the remaining 23 items (Fig. 2). In the CFA, items 2 and 24, whose factor loadings were 0.44 and 0.47, respectively, were deleted because their low factor loadings (threshold < 0.05; Chin 1998)). The subsequent model fit indices were as follows: χ^2 (179) = 440.402 ($p < 0.001$), RMSEA = 0.074 ($p < 0.05$), CFI = 0.908, GFI = 0.871, AGFI = 0.833, NFI = 0.855, TLI = 0.892 (Table 3). The fit indices, taken overall, suggest an acceptable fit for the three factor model (Hu and Bentler 1999; Schermelleh-Engel et al. 2003). Note that we initially conducted a preliminary EFA and CFA using the same procedure reported by Zulch (2019), with principal component analysis (PCA) as the extraction method and direct Oblimin for rotation. The CFA goodness-of-fit statistics indicated that the resulting 3-factor model was barely acceptable overall. (The results of this are provided as supplementary material.) We then conducted our major EFA and CFA analyses using Maximum Likelihood as the method of extraction and Varimax rotation, reported in Table 2. These goodness-of-fit statistics were all superior to those from the preliminary analyses and we have reported only the values from the second, major, analyses in Table 3. As an additional check of the appropriateness of the three factor model, a further CFA was carried to test the fit of a two factor solution model to the data. The goodness of fit indicators are shown in Table 3. The fit was notably poorer than that of the three factor model. Note that because only three factors had eigen values ≥ 1.0 we did not test a four-factor model (Fig. 1).

To summarize the results of the construct validity analyses: the 21 items retained from the EFA were found to constitute three subscales. Knowledge and Management of the External Situational Environment includes items 3, 4, 5, 7, 8, 9, 10, 11, 12. Management of one's Emotional and Psychological Response includes items 13, 14, 15, 16, 17, 18, 19, 23, 25, and Management of one's Social Environment includes items 20, 21, 22. It should be noted that four items in the PPDTS-26 were not retained in the Turkish version: 1, 2, 6, 24.

3.3 Reliability analysis

Cronbach's alpha for the whole Turkish version of the PPDTS was 0.95, those for the three subscales were: Knowledge and Management of the External Situational Environment 0.91; Management of one's Emotional and Psychological Response 0.93; and Management of one's Social Environment 0.83, indicating high levels of internal consistency reliability.

Table 2 Exploratory factor analysis results of the PPDTS

Items	Rotated component matrix		
	Factor 1	Factor 2	Factor 3
Item 16. When necessary, I can talk myself through challenging situations	**.811**	.156	.181
Item 15. I think I am able to manage my feelings pretty well in difficult and challenging situations	**.778**	.249	.291
Item 18. I know which strategies I could use to calm myself in a severe natural disaster such as earthquake, flood, forest fire or epidemic/pandemic	**.774**	.308	.191
Item 14. In a severe natural disaster situation I would be able to cope with my anxiety and fear	**.776**	.368	.061
Item 17. I seem to be able to stay cool and calm in most difficult situations	**.702**	.197	.274
Item 19. If I found myself in a severe natural disaster such as earthquake, flood, forest fire or epidemic/pandemic situation, I would know how to manage my own response to the situation	**.672**	.395	.271
Item 25. I usually prepare mentally for situations that might be difficult or stressful	**.658**	.254	.380
Item 23. I am able to identify my feelings pretty well in challenging situations	**.625**	.338	.409
Item 24. During severe natural disaster such as earthquake, flood, forest fire or epidemic/pandemic, I would notice if I am feeling anxious or stressed. [a]	**.581**	.313	.532
Item 13. I feel reasonably confident in my own ability to deal with stressful situations that I might find myself in	**.580**	.450	.217
Item 8 I know which household preparedness measures are needed to stay safe in a very severe natural disaster such as earthquake, flood, forest fire or epidemic/pandemic	.161	**.765**	.207
Item 10 I know what to look out for in my home and workplace in case of an emergency related to natural disaster such as earthquake, flood, forest fire or epidemic/pandemic	.225	**.755**	.256
Item 12. I am knowledgeable about the impact that very severe natural disaster such as earthquake, flood, forest fire can have on my home	.193	**.709**	.075
Item 7. I am familiar with the severe natural disaster such as earthquake, flood, forest fire or epidemic/pandemic preparedness materials available to me	.277	**.699**	.211
Item 11. I am familiar with the disaster warning system messages used for extreme natural disaster such as earthquake, flood, forest fire or epidemic/pandemic	.276	**.679**	.151
Item 5 I know how to adequately prepare my home for the forthcoming natural disaster such as earthquake, flood, forest fire or epidemic/pandemic	.332	**.596**	.301
Item 9. I am familiar with the signs of an approaching natural disaster such as earthquake, flood, forest fire or epidemic/pandemic	.278	**.583**	.188
Item 3 I am confident that I know what to do and what actions to take in case of a severe natural disaster such as earthquake, flood, forest fire or epidemic/pandemic	.295	**.542**	.262

Table 2 (continued)

Items	Rotated component matrix		
	Factor 1	Factor 2	Factor 3
Item 4 I would be able to locate the preparation materials in a natural disaster such as earthquake, flood, forest fire or epidemic/pandemic situation easily	.370	**.540**	.282
Item 2 I regularly follow news bulletins and/or meteorological forecasts during a natural disaster such as earthquake, flood, forest fire or epidemic/pandemic. [1a]	.136	**.435**	.314
Item 21 If others are in distress, I would know how to calm them down	.354	.364	**.693**
Item 20 I would be able to tell easily if those/others around me are in distress	.366	.296	**.682**
Item 22 I know which strategies I could use to calm others in a severe natural disaster such as earthquake, flood, forest fire or epidemic/pandemic warning situation	.324	.412	**.518**
Eigenvalues	12.11	2.04	1.08
Explained Variance (%)	52.67	8.89	4.69
Cumulative Variance (%)	52.67	61.56	66.25

Items deleted after the EFA because of low loading: Item 1 and its loading: 0.297; because of cross-loading: item 6 and its loadings were 0.454–0.476

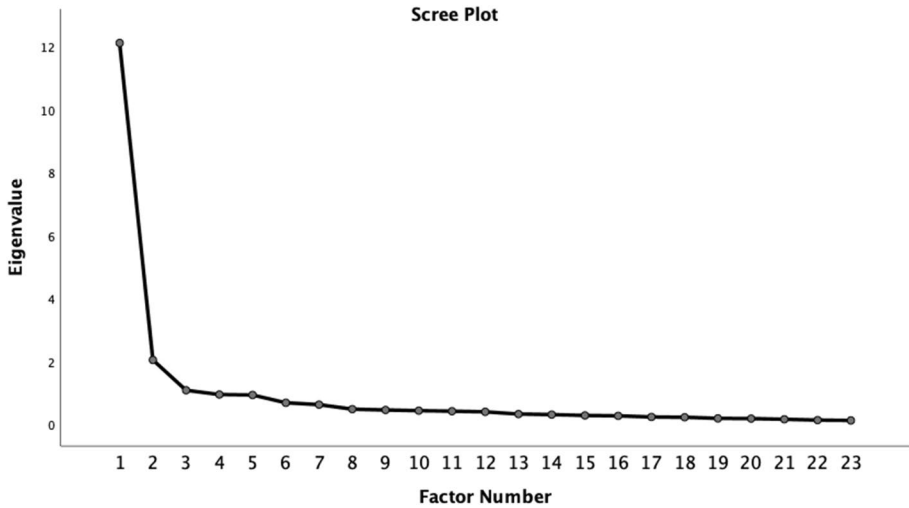[a]Items 2 and 24 were deleted from the scale subsequently following the CFA

Fig. 1 Scree plot of the factor analysis of the PPDTS

4 Discussion

The aim of this study was to develop and test the psychometric properties of a Turkish version of the PPDTS-26. The results indicate that the resulting 21-item PPDTS-T21 measure demonstrated construct validity and internal consistency reliability. It is thus a survey scale that can be used to measure the current levels of Turkish community members' psychological preparedness for a disaster event. The composition of the PPDTS-T21 differs in several respects from those of the two previous versions, PPDTS-18 (Zulch et al. 2012) and PPDTS-26 (Zulch 2019). As described earlier, the original 18-item version developed by Zulch et al. (2012) comprised 18 items making up two subscales: *Knowledge and Management of the External Situational Environment* and *Anticipation, Awareness and Management of One's Psychological Response.* The later 26 item version (Zulch 2019) comprised four subscales: *Knowledge and Management of the External Situational Environment, Management of one's Emotional and Psychological Response*; *Management of one's Social Environment*, and *Anticipatory Coping with Emotional Response.* A study by McLennan et al. (2020) using the original PPDTS-18 (Zulch et al. 2012) reported evidence supportive of two subscales, consistent with the findings from that original study: a 10-item *Knowledge and Management of the Threat Situation* sub-scale, and an 8-item *Anticipation, Awareness and Self-Management sub-scale.* The PPTDS-T21 comprises three subscales: *Knowledge and Management of the External Situational Environment* (9 items), *Management of one's Emotional and Psychological Response* (9 items), and *Management of One's Social Environment* (3 items). We did not find an *Anticipatory Coping with Emotional Response* subscale. That most likely stems from Zulch's participants being Australian residents, whose most commonly experienced disaster events are weather-related: cyclones, tropical storms and wildfires, all of which are associated with early warnings and updates. Our participants were Turkish residents and the country's most destructive disaster events have been earthquakes, for which there is little warning. It appears that further research about conceptualizing and measuring the psychological preparedness for disaster construct is warranted, especially concerning cross-cultural differences. As we noted in the Introduction, it is likely that the psychological preparedness required of individuals to respond
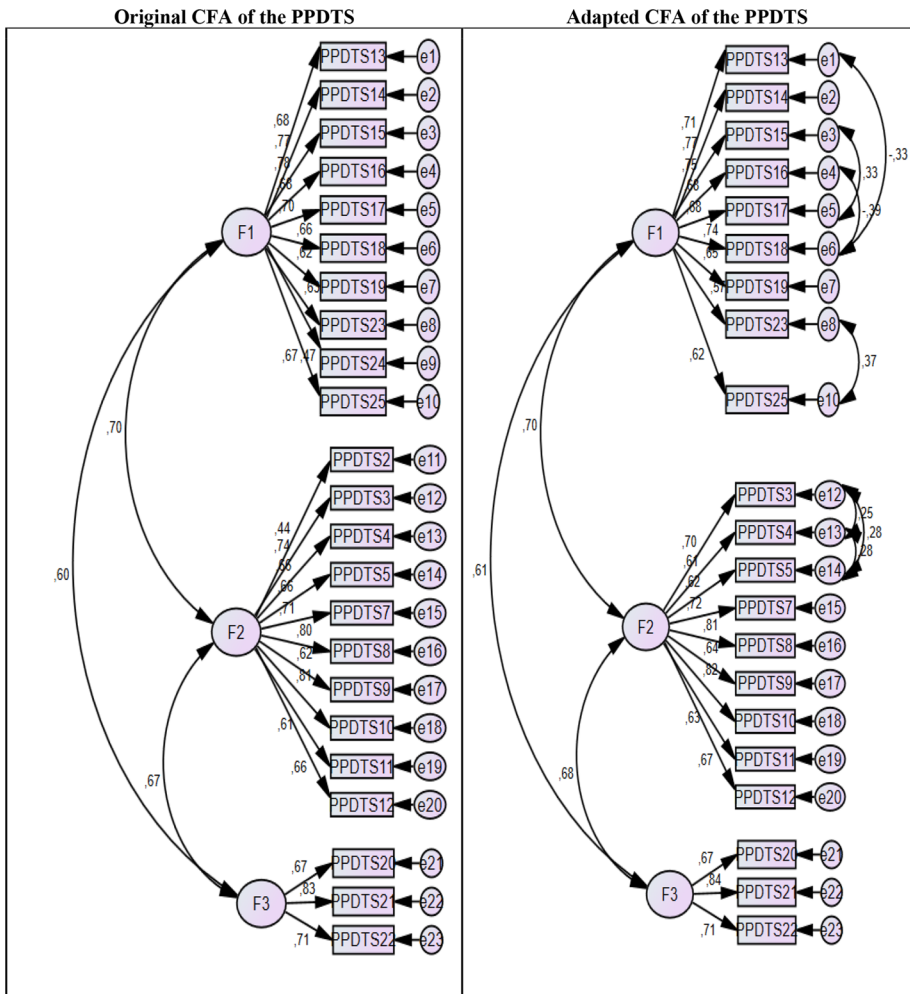
Fig. 2 Original and adapted confirmatory factor analysis models of the PPDTS

adaptively to a hazard event is related to their socio-economic and cultural environments and their history of specific natural hazards threats (Kasapoglu and Ecevit 2004).

Limitations of the present study are acknowledged. In particular, the participants were all associated with a university and their ages were on average lower than that of the wider Turkish population. Additional studies using the PPDTS-T21 to survey residents of particular at-risk communities are needed to address these. Also, there is a need to investigate the criterion-related validity and the test–retest reliability (stability) of PPDTS-T21 scores.

Table 3 Goodness-of-fit measures of the two and three factor models *Sources*: Browne and Cudeck (1993); Byrne (2001); Hu and Bentler (1999); Kline (1998); Kriston et al. (2008); Schermelleh-Engel et al. (2003)

Goodness-of-fit measure	Good fit value*	Acceptable value*	3 Factor model values (21 Items)	2 Factor model values (19 Items)
$\chi 2$ /degree of freedom	≤ 3.00	≤ 5.00	2.460	2.792
Goodness-of-fit index (GFI)	≥ 0.90	≥ 0.80	0.871	0.871
Adjusted goodness-of-fit index (AGFI)	≥ 0.95	≥ 0.85	0.833	0.831
Normed-fit index (NFI)	≥ 0.95	≥ 0.80	0.855	0.853
Tucker-Lewis Index (TLI)	≥ 0.95	≥ 0.80	0.892	0.882
Comparative fit index (CFI)	≥ 0.95	≥ 0.85	0.908	0.900
Root mean square error of approximation (RMSEA)	≤ 0.05	≤ 0.08	0.074	0.082

5 Conclusion

The Turkish version of the PPDTS (PPDTS-T21) appears to be a valid and reliable tool to measure levels of psychological preparedness for disaster threats in Turkish communities. Due to the rapidly increasing number of natural disasters associated with climate change, it is very likely that residents of many Turkish communities may be affected by future disasters and enhancing both psychological and physical/material preparedness will be essential to mitigate such risks. The PPDTS-T21 measure can be used to assess levels of psychological preparedness among residents of Turkish communities in similar ways that levels of physical/material preparedness can be assessed using questionnaire measures such as the brief and general Public Readiness Index (Council for Excellence in Government 2006), or the more comprehensive and specific Earthquake Readiness Scale (Spittal et al. 2006). Similarly, the PPDTS-T21 can be used to evaluate the effectiveness of community safety psychological preparedness enhancement initiatives aimed at mitigating the impacts of future disasters on community mental health.

Appendix

Turkish Version of the Psychological Preparedness for Disaster Threat Scale (PPDTS-T21)

Afet Tehdidi için Psikolojik Hazırlık Ölçeği

Bu bölüm, deprem, sel, orman yangınları ve salgın hastalıklar gibi doğal afetler karşısında nasıl düşünebileceğiniz, hissedebileceğiniz veya tepki vereceğinizle ilgilenmektedir. Doğru ya da yanlış cevap yoktur. Lütfen aşağıdaki ifadelerden her birinin sizin için ne derece doğru olduğunu belirtiniz.

		Kesinlikle Katılmıyorum	Katılmıyorum	Kısmen Katılıyorum	Kesinlikle Katılıyorum
1	Şiddetli deprem, sel, orman yangını veya salgın hastalık gibi doğal afet durumlarında ne yapacağımı ve hangi önlemleri alacağımı bilirim	1	2	3	4
2	Deprem, sel, orman yangını veya salgın hastalık gibi doğal afet uyarısı durumunda hazırlık malzemelerinin yerini kolayca bulabilirim	1	2	3	4
3	Deprem, sel, orman yangını veya salgın hastalık gibi yaklaşan doğal afet dönemi için evimi nasıl yeterince hazırlanacağımı biliyorum	1	2	3	4
4	Deprem, sel, orman yangını veya salgın hastalık gibi doğal afetler için kullanımıma sunulan hazırlık malzemelerine aşinayım	1	2	3	4
5	Çok şiddetli bir deprem, sel, orman yangını veya salgın hastalık gibi doğal afet durumunda güvende kalmak için hangi ev hazırlık önlemlerinin alınması gerektiğini biliyorum	1	2	3	4
6	Deprem, sel, orman yangını veya salgın hastalık gibi yaklaşan bir doğal afetin belirtilerini tanıyorum	1	2	3	4
7	Deprem, sel, orman yangını veya salgın hastalık gibi doğal afetlere ilişkin acil bir durum gelişmesi halinde, evimde ve iş yerimde nelere dikkat etmem gerektiğini biliyorum	1	2	3	4
8	Deprem, sel, orman yangını veya salgın hastalık gibi aşırı doğal afet olayları için kullanılan afet uyarı sistemi mesajlarını tanıyorum	1	2	3	4
9	Çok şiddetli deprem, sel, orman yangını veya salgın hastalık gibi doğal afetlerin evim üzerindeki etkileri hakkında bilgi sahibiyim	1	2	3	4

		Kesinlikle Katılmıyorum	Katılmıyorum	Kısmen Katılıyorum	Kesinlikle Katılıyorum
10	İçinde bulunabileceğim stresli durumlarla başa çıkabilme yeteneğime oldukça güveniyorum	1	2	3	4
11	Şiddetli bir deprem, sel, orman yangını veya salgın hastalık gibi doğal afet durumunda endişe ve korkumla başa çıkabilirim	1	2	3	4
12	Zor durumlarda duygularımı oldukça iyi yönetebildiğimi düşünüyorum	1	2	3	4
13	Gerektiğinde zorlu durumlarda kendimle konuşabilirim	1	2	3	4
14	En zor durumlarda soğukkanlı ve sakin gözükürüm	1	2	3	4
15	Şiddetli bir deprem, sel, orman yangını veya salgın hastalık gibi doğal afet durumunda kendimi sakinleştirmek için hangi stratejileri kullanabileceğimi biliyorum	1	2	3	4
16	Kendimi deprem, sel, orman yangını veya salgın hastalık gibi bir doğal afetin içinde bulsaydım, duruma karşı tepkimi nasıl yöneteceğimi bilirdim	1	2	3	4
17	Çevremdekilerin/başkalarının sıkıntıda olup olmadığını kolaylıkla anlayabilirim	1	2	3	4
18	Başkaları sıkıntıdaysa, onları nasıl sakinleştireceğimi bilirim	1	2	3	4
19	Şiddetli bir deprem, sel, orman yangını veya salgın hastalık gibi doğal afet uyarısı durumunda, başkalarını sakinleştirmek için hangi stratejileri kullanabileceğimi biliyorum	1	2	3	4
20	Zorlu durumlarda duygularımı oldukça iyi tanımlayabilirim	1	2	3	4
21	Genellikle zor veya stresli olabilecek durumlara zihinsel olarak hazırlanırım	1	2	3	4

Declarations

Conflict of interests The authors have no relevant financial or non-financial interests to disclose.

Ethical approval Ethical approval was taken from the University of Giresun, Türkiye, and was added as a supplementary file.

Consent for publication It was implied by participants choosing to complete and submit their anonymous online questionnaire.

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