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A NEW LOOK AT THE FACTOR STRUCTURE OF THE CENTRALITY OF EVENT SCALE

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Abstract

Objective: Centrality of Event theory suggests that traumatic events are overly integrated into the memory network as such events become central to the identity, and serve as a reference and turning point. Berntsen and Rubin (2006, 2007) developed Centrality of Event Scale in order to assess these features, and gathered evidence mostly from Western cultures with contradictory findings. However, centrality of event theory is closely related how the negative event integrated into the self-concept, and therefore scientific support across different cultures is required as well as across qualitatively distinct negative events. The current study investigated the psychometric properties of the scale for Turkish culture with a confirmatory factor analytic approach to compare validity of various factor structures, on distinct negative event histories to cross-validate the factor structure across distinct samples. **Method**: A sample of 340 undergraduate students completed Turkish versions of Centrality of Event Scale, Posttraumatic Stress Checklist-Civilian version, and Beck Depression Inventory. **Results**: Confirmatory factory analyses and measurement invariance tests revealed that the short version of CES with a single factor solution is a valid measure sample from Turkish culture and samples with distinct negative event histories. **Conclusion**: The results revealed that the short form of the scale to be a reliable and valid instrument for Turkish culture.

Keywords: Centrality of Event Scale, Turkish adaptation, confirmatory factor analysis, measurement invariance

Öz

Olayların Merkeziyeti teorisi, travmatik olayların kimliğin merkezine yerleşerek referans ve dönüm noktası işlevi gördüğünü ve bu şekilde hafıza ağına aşırı entegre olduğunu önermektedir. Berntsen ve Rubin (2006, 2007) tarafından geliştirilen Olayların Merkeziyeti Ölçeği bahsi geçen bu özellikleri ölçmek amacıyla geliştirilmiştir. Ölçeğe dair kanıtlar çoğunlukla Batı kültüründen elde edilmiştir ve çelişkili sonuçlara işaret etmektedir. Olayların merkeziyeti teorisi, olumsuz olayların benlik kavramına entegre olduğunu savunduğundan, farklı kültürlerden elde edilecek bilimsel desteğe ihtiyaç vardır. Benzer şekilde, olumsuz yaşantıların farklı türleri arasında da geçerliğinin incelenmesi önem arz etmektedir. Bu çalışmada, literatürde yer alan farklı faktör yapılarının ve farklı olay türlerinin geçerliğini karşılaştırmak amacıyla, ölçeğin psikometrik özellikleri Türk kültüründe doğrulayıcı faktör analizi kullanılarak incelenmiştir. Ayrıca farklı örneklemlerde faktör yapısının incelenmesi amaçlanmıştır. **Yöntem**: 340 üniversite öğrencisinden oluşan katılımcılar Olayların Merkeziyeti Ölçeği ile beraber Travma Sonrası Stres Kontrol listesini ve Beck Depresyon Envanterini doldurmuşlardır. **Bulgular**: Doğrulayıcı faktör analizi ve ölçme değişmezliği testi sonuçları, Olayların Merkeziyeti Ölçeğinin tek faktörlü kısa formunun Türk kültürü ve farklı negatif yaşam olayları için geçerli bir ölçüm aracı olduğuna işaret etmiştir. **Sonuç**: Bulgular, ölçeğin kısa formunun Türk kültürü için güvenilir ve geçerli bir ölçüm aracı olduğunu göstermiştir.

Anahtar Kelimeler: Olayların Merkeziyeti Ölçeği, Türkçe adaptasyonu, doğrulayıcı faktör analizi, ölçüm değişmezliği.

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INTRODUCTION

Trauma is defined as an event that involves an actual or threatened death or serious injury, or a threat to the physical integrity of self or others in DSM-IV-TR and DSM-V. In that sense, trauma is an event that is unusual, unexpected and extremely emotional, and therefore violates one's schema-driven knowledge of self, the world, and his/her expectations (Janoff-Bulman, 1988; Berntsen & Rubin, 2007). Consequently, such events are assumed to be fragmented, incoherent, and distinctive memories, indicating that they remain disintegrated from and disconnected with the other parts of the individual's autobiographical memory (Rubin, Dennis, & Beckham, 2011). However, another theoretical view, centrality of event theory (Berntsen & Rubin, 2006, 2007), poses that instead of disintegration of the memory, the traumatic event is in fact a central memory to the person's life story and identity (Berntsen, Willert, & Rubin, 2003), indicating enhanced integration to the autobiographical memory (Berntsen & Rubin, 2007). This view argues that traumatic memories are formed based on distinct and emotional events, and due to that, these memories become a cognitive reference point in both organizing prior autobiographical knowledge, and in interpreting negative and traumatic experiences and expectations for the future. In that sense, these memories of emotional events serve as turning points in the individual's life story and become a central aspect to the person's identity (Berntsen & Rubin, 2006). Evidence for centrality of event theory largely comes from studies focused on autobiographical memory, memory retrieval and reminiscence bump. These studies revealed that retrieval of autobiographical memories are generally positively biased, that is people mostly tend to recall positive events. However, this positive bias is either reduced or even reversed in emotional disorders (Berntsen, Rubin, & Siegler, 2011). According to Berntsen and Rubin (2006, 2007), this difference regarding reduction in positive bias depends on the extent a stressful and/or traumatic event is integrated and connected to other memories, and therefore, is related to how central the person perceives the event to his/her life story and identity measured by Centrality of Event Scale (CES, Berntsen & Rubin, 2006). More specifically, the severity of the central events do not necessarily meet the criterion A of DSM (APA, 2004), rather highly emotional and distinctive negative events could result in PTSD if they become central to the individual's identity (Berntsen & Rubin, 2006; for a review see Rubin & Feeling, 2013). In fact, numerous studies found a positive correlation between the centrality of negative/stressful (e.g., Berntsen & Rubin, 2006, 2007, 2008; Berntsen, Rubin, & Siegler, 2011; Rubin, Dennis, & Beckham, 2011; Boals, Hayslip, Knowles, & Banks, 2012) and traumatic events (e.g. Groleau, Calhoun, Cann, & Tedeschi, 2013; Bernard, Whittles, Kertz, & Burke, 2015; Boals & Murrell, 2016; Wamser-Nanney, Howell, Schwartz, & Hasselle, 2017) and level of PTSD symptoms. This relation persisted even after controlling for factors such as depression, anxiety, dissociation, neuroticism, repressive coping, self-consciousness, and severity of trauma (e.g. Berntsen & Rubin, 2007; Rubin, Boals, & Berntsen, 2008; Berntsen, Rubin & Siegler, 2011).

Much of the evidence gathered from Western cultures, where self-conception constructed from an independent perspective. Since centrality of event theory is closely related how the traumatic/stressful event integrated into the self-concept, scientific support across different cultures is required. Further inquiry in an interdependent self-oriented culture, such as Turkey, might be a great contribution to develop a comprehensive understanding of centrality of event theory. Since, cross-cultural studies warrant congruent measures, the first step of such comparison should be adapting the scale into different cultures. Hence, first aim of the current study was to adapt the CES into Turkish in order to pave the way for further inquiry.

In addition, most of the validation studies were explanatory in nature in which only explanatory factor analytic methods were applied. More specifically, Berntsen and Rubin (2006) intended to develop a three-factor scale (reference point, turning point, and identity), however Principal Component Analysis resulted with a 20-item, single factor scale. The authors also abridged the scale into 7-item by selecting highly-correlated items with the total score. Further validation studies from different populations or cultures resulted in different factorial structures. For example, Robinaugh and McNally (2011) investigated the factor structure of the scale on a sample consisted of women who reported a childhood sexual abuse history. Although the Principal Component Analysis resulted with a three-factor solution, the items that were loaded on the factors showed slight variations from the original scale. Similarly, another study (Gauer, Souza, Silveria, & Sediyama 2013) aimed to adapt the scale in Brazilian context and tested the factor structure of CES on undergraduate students, using their reports of a stressful or traumatic event. Principal Component Analysis of this study also revealed a three-factor solution with slight variations of the items that were loaded on the factors. Additionally, the authors suggested a short version of the scale, resulting a similar structure with only one item differing from the original scale. In a recent adaptation study (Fernandez-Alcantara et al., 2013), undergraduate Spanish students were asked to fill the scale with taking a stressful or traumatic event as reference and the findings of Principal Component Analysis revealed a single explanatory factor. Apart from other studies, one other study (Vagos, de Silva, Brazao, & Rijo, 2016) aimed to test the validity of the scale using confirmatory factor analysis for a Portuguese adolescent sample and found evidence for a three-factor solution. In sum, adaptation and validity testing studies resulted in contradictory findings; however most of the studies investigated the factor structure through explanatory analyses, rather than confirmatory. Therefore, second aim of the study was to compare different factor structures of centrality of event scale provided by Berntsen and Rubin (2006) (i.e., three-factor, single factor, single factor with short version) through confirmatory analytic approach. Further validity evidence was also sought through the correlations of the scale with other variables (i.e., depression and PTSD).

Additionally, since the theory assumes that instead of the presence of a trauma history, the extend of integration of any stressful event might become central to one's identity, most of the samples of the previous studies included mostly college students and asked to take either most stressful or traumatic event as a reference point while filling the scale, without distinguishing the content of the event. However, it is possible that the nature of the event might influence the validity of the scale. That is, distinct events might be integrated to the self differently, which raise the question of validity across different negative event histories. Therefore, the third aim of the study was to test the construct validity of the scale on two separate samples (traumatic events and stressful events).

METHOD

Participants

As in the original study, the current study included university students. The sample consisted of 340 university students, with a mean age of 21.12 (*SD* = 2.2). Of the participants 75% were women (*N* = 254). Participants were asked to report most stressful event in their lives and to provide a brief description of the event. Taking this event as a reference, they were asked to fill the measures. The events, then, were categorized using a system developed by Thorne and McLean (2001) and used in other studies (e.g. Fitzgerald, Berntsen, & Broadbridge, 2016). Accordingly, categories included life-threatening event to self and other (e.g. serious illness, serious accident), aggression (e.g. physical fight with injuries), physical assault (e.g., rape, sexual abuse), relationship events (e.g. breakup, parents' divorce),

achievement-related events (e.g., being expelled from school, failing at university admissions), and unclassifiable events. In accordance with the aim of the study, the broad categories then reduced to traumatic events and stressful negative events. More specifically, the traumatic events included events that meet the DSM's trauma definition (life-threatening events to self and other, aggression, physical assault) and stressful events included the rest of the categories. Of the participants 165 (48.5%) reported traumatic events, whereas 175 (51.5%) reported stressful negative events.

Measures

Centrality of Event Scale (CES; Berntsen & Rubin, 2006) is a 5-point Likert type scale, consisting of 20 items[6]. The participants were asked to respond to the items referring to the most stressful or traumatic event in their lives. Although the scale originally developed with an intention to measure events' centrality on three dimensions (turning point, reference point, and identity), the items loaded on a single factor (Cronbach's alpha = .94). The authors provided convergent-based evidence through Posttraumatic Stress Checklist- Civilian Version (PCL; Weathers, Litz, Huska, & Keane, 1994), and Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). In the current study, the items on the scale translated into Turkish. Additionally, in order to investigate the convergent validity of CES, validated Turkish version of PCL (Kocabasoglu, Corapcioglu, Yargic, & Geyran, 2005) and BDI (Hisli 1989) were used.

RESULTS

Analytic Strategy

A series of Confirmatory Factor Analyses (CFA) was conducted on the traumatic and negative life event samples to test the factor structure of the CES. After finalizing the factor structure, measurement variance across traumatic and negative life event groups was tested. Measurement invariance applied to final best-fitting factor structure only, since measurement invariance requires a base model in which data fits the model well (Kline, 2011). Finally, bivariate correlations, means, and standard deviations were examined on the CES, depressive, and PTSD symptoms to test construct validity.

Statistical models

Descriptive statistics were conducted with IBM SPSS 20 and CFA models were performed using Lisrel 8.51(Jöroskog & Sörbom, 1993). To test CFA models, raw data was used as input and maximum likelihood estimation was employed in the analyses. Normal theory weighted least squares $\chi 2$ was used for the evaluation of model fit. Besides, we used the Comparative fit index (CFI), the Standardized root mean square residual (SRMR), and the Root-mean-square-error of approximation (RMSEA) following Hu and Bentler's two-index presentation strategy. Additional fit indices were evaluated since $\chi 2$ values are highly vulnerable to sample size and rarely yield nonsignificant results (Barret, 2007). Values close to 0.06 for RMSEA, values close to 0.95 for CFI, and values close to 0.08 for SRMR are indicative of good fit (Hu & Bentler, 1999). The $\chi 2$-difference-test ($\Delta\chi 2$) was utilized to compare relative model fit. This test was only applied to measurement invariance across traumatic and negative groups since it requires nested models in which competing models have same number of parameters (Cheung & Rensvold, 2002).

Specification of CFA models

The following three models were tested considering the previous research (Berntsen & Rubin, 2006): Model 1 was a three-factor model with all items of the CES. Model 2 was a single-factor with all items, and Model 3 was a single factor model with short version. All three models were tested on the participants who experienced traumatic event, and participants who experienced negative life event, separately. Relevant model modifications were applied on the final best-fitting model.

Measurement invariance across groups was tested on the final factor structure of the CES. As a convention, general forms of measurement invariance are tested first, followed by more specific tests (Vandenburg & Lance, 2000). This type of investigation is preferred across others since identifying differences across groups is more likely (Kline, 2010). Firstly, configural invariance, which implies that the same factor structure fits across groups, was tested. Specifically, same number of factors is fixed with same number of items loaded on those factors, but the estimated parameters are different. Secondly, factor loadings invariance or construct-level metric invariance tested in which unstandardized factor loadings are equal across groups. Thirdly, scalar invariance, which implies equal indicator (item) means across groups, was tested. Since invariance of residual variance test is optional and highly stringent (Brown, 2015), we terminated invariance tests at scalar invariance level.

Results

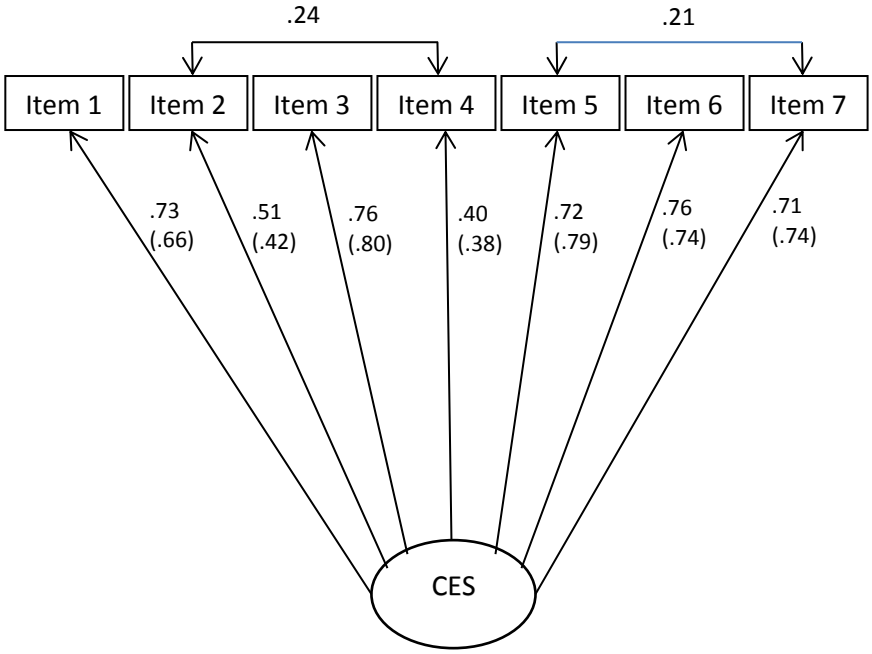
As shown in Table 1, three-factor model and single-factor model yielded poor fit to the data. Short version of single factor model yielded acceptable fit to the data but yielded high RMSEA. Inspection of residual variances indicated that there were strong correlations between two pairs of similarly worded items; '*This event has become a reference point for the way I understand myself and the world*' (item 6) with '*This event has colored the way I think and feel about other experiences*' (item 12) and '*This event permanently changed my life*' (item 16) with '*This event was a turning point in my life*' (item 18). In order to increase model fit, proposed modifications were conducted in which residuals of these pairs are allowed to correlate. Modified models revealed good fit to the data for both samples with all fit indices above the criteria. Thus, correlated errors were also specified in the measurement invariance tests.

Table 1. Fit indices for the structural models of centrality of event

Model	$\chi 2$ (df)	RMSEA(90% CI)	CFI	SRMR
Traumatic event				
Three-factor	472.01(148)	.116 (.104-.127)	.850	.073
Single-factor	588.83 (170)	.123 (.112-.133)	.812	.076
Single-factor (short version)	56.95 (14)	.133 (.098-.170)	.914	.066
Modified version[a]	9.32 (12)	.001 (.001-.062)	1.000	.029
Negative event				
Three-factor	595.81 (148)	.132 (.121-.143	.796	.081
Single-factor	738.03 (170)	.139 (.128-.149)	.751	.085
Single-factor (short version)	64.06 (14)	.143 (.109-.180)	.904	.068
Modified version[a]	22.84 (12)	.072 (.023-.117)	.979	.035

a: Correlated errors permitted on the single-factor solution of the short version

Figure 1 presents factor loadings and correlated errors for both samples. All items significantly loaded on the single factor (see Appendix for the items). Factor loadings range from .40 to .76 for traumatic event group and from .38 to .80 for negative event group. Cronbach's alphas were .86 and .85 for traumatic event group and negative event group, respectively.



Note: Factor loadings in parentheses represent the negative event group.

Figure 1. Factor Loadings of the Single-factor Short Model for CES

Results of measurement invariance tests were depicted in Table 2. Measurement invariance tests across groups were conducted on the modified single-factor solution for the short version of the CES. Configural invariance across groups can be evaluated via investigation of overall model fit. Accordingly, configural invariance model yielded good fit to data, which suggests that, the factor structure (single factor model) and items loaded on the factor are same across groups. Results also provided factor-loading invariance since the $\chi 2$ difference test revealed nonsignificant results. Thus, the fit of factor loading invariance model is not worse than the previous model implying that the items loaded on the factor similarly across groups. Intercept invariance test revealed poor fit to the data and also $\chi 2$ difference test yielded significant results suggesting intercept non-invariance across groups. Accordingly, means of the items are different across groups.

Table 2. Fit indices of the invariance tests across groups

Type of invariance	$\chi 2$ (df)	$\Delta\chi 2$ (Δdf)	RMSEA (90% CI)	SRMR	CFI
Configural invariance	31.63 (24)	-	.043 (.001-.081	.035	.992
Loading invariance	33.23 (30)	1.60 (6)^{ns}	.025 (.001-.065	.996	.041
Scalar invariance	152.79 (43)	119.56 (13)*	.123 (.102-.144)	.893	.173

* $p < 0.001$

Finally, Table 3 presents the descriptive information of short version of CES, PTSD and depressive symptoms.

Table 3. Descriptive Information of the Study Variables

Variables	*M*	*SD*	*Range*
Centrality of event	21.07	7.06	7-35
PTSD symptoms	41.39	13.44	17-85
Depressive symptoms	11.60	8.75	.00-48

Additionally, the bivariate of the correlations of the variables are shown in Table 4, and the results supported the construct validity of the short form of CES.

Table 4. Correlations between the Study Variables

Variables	1	2	3
1 Centrality of event	1		
2 PTSD symptoms	.42**	1	
3Depressive symptoms	.30**	.74**	1

***p* <.001

DISCUSSION

The results of the study suggested that the short version of CES (Berntsen and Rubin, 2006) to be a valid and reliable measure for Turkish culture. The CFA results yielded that the Turkish version of the CES fits well with single factor model for short form, in line with the constructs designed by Berntsen and Rubin (2006). More specifically, the original Centrality of Event Scale was developed with an intention to measure events' centrality on three dimensions; however resulting with only one factor (Berntsen & Rubin, 2006). In the same study, authors abridged the form to a short form. On the other hand, the scale's Brazilian adaptation (Gauer, Souza, Silveira, & Sediyamai, 2013) and re-test on an adult sample with a history of sexual abuse (Robinaugh & McNally, 2011) resulted with three-factor solutions. Current study tested all three versions with a confirmatory factor analytic strategy to shed light on the contradictory findings of explanatory results. As a result, Turkish version of the scale resulted with a single factor solution for short form. The current study also found strong positive correlations between CES and both PTSD and depression symptoms. Accordingly, as the individual holds a negative or traumatic event central to his/her identity (specifically, views it as a life changing event and takes it as a reference point to assign meaning to his current relations), the severity of both PTSD and depression symptoms increases. These findings support the convergent validity of the Turkish version of the scale.

Furthermore, measurement invariance revealed that the short version of the CES is a valid measure for different negative event histories. Thus, the short version of the CES scale is suitable to measure traumatic events defined by the DSM's trauma definition as well as stressful events encountered during the normal course of life. Previous studies aiming either to test the validity of the original scale in different samples or the factor model in different cultures failed to find consistent factor models via Principal Component Analysis. For example, since Berntsen and Rubin (2006) developed the scale for negative and traumatic events without distinguishing DSM's trauma definition, Robinaugh and McNally (2011) tested the original structure in a sample who were exposed to traumatic events (i.e. sexual abuse) and found a three-factor structure. Similarly, Brazilian (Gauer, Souza, Silveria, & Sediyama 2013) and Spanish (Fernandez-Alcantara et al., 2013) adaptation studies included participants with either traumatic or negative events, and Brazilian version resulted with a

three-factor model, whereas Spanish version revealed a single factor. Only one study (Vagos, de Silva, Brazao, & Rijo, 2016) tested the factor structure using confirmatory factor analysis and the results yielded a three-factor model; however the study's main aim was to investigate the scale's validity in an adolescent sample, rather than adults. Furthermore, when the factor loadings are investigated it appears that none of the studies could result with similar items loaded on the same factor. In other words, in all versions of three-factor models, there were differences among the items that represent the factors. Therefore, the current study aimed to shed some light on the contradictory nature of the findings and through measurement invariance tests showed that a single factor model for short form provides a good fit for both traumatic and stressful events.

In sum, the short version of CES found to be a reliable and valid measure for Turkish culture and across distinct negative event histories. Further studies are required to test the hypotheses of Centrality of Event Theory with Turkish samples.

REFERENCES

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed. Text Revision). Washington, DC: American Psychiatric Association.

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorder*s (5th ed. Text Revision). Washington, DC: American Psychiatric Association.

Beck, A.T., Ward, C.H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4,* 561-571.

Bernard, J.D., Whittles, R.L., Kertz, S.J., & Burke, P.A. (2015). Trauma and event centrality: Valence and incorporation into identity influnce well-being more than exposure. *Psychological Trauma: Theory, Research, Practice and Policy, 7(1),* 11-17. doi: 10.1037/a0037331.

Berntsen, D., & Rubin, D. C. (2006). Centrality of event scale. A measure of integrating a trauma into one's identity and its relation to post-traumatic stress disorder symptoms. *Behaviour Research and Therapy, 44,* 219–231. doi:10.1016/j.brat.2005.01.009.

Berntsen, D., & Rubin, D. C. (2007). When a trauma becomes a key to identity: Enhanced integration of trauma memories predicts posttraumatic stress disorder symptoms. *Applied Cognitive Psychology, 21(4),* 417-431. doi:10.1002/acp.1290.

Berntsen, D. & Rubin, D.C. (2008). The Reappearance Hypothesis Revisited: Recurrent Involuntary Memories after Traumatic Events and in Everyday Life. *Memory and Cognition, 36(2),* 449-460. doi: 10.3758/MC.36.2.449.

Berntsen, D., Rubin, D. C., & Siegler, I. C. (2011). Two versions of life: emotionally negative and positive life events have different roles in the organization of life story and identity. *Emotion, 11(5),* 1190. doi: 10.1037/a0024940.

Berntsen, D., Willert, M., & Rubin, D. C. (2003). Splintered memories or vivid landmarks? Qualities and organization of traumatic memories with and without PTSD. *Applied Cognitive Psychology, 17(6),* 675-693.doi: 10.1002/acp.894.

Boals, A. (2010). Events that have become central to identity: Gender differences in the centrality of event scale for positive and negative events. *Applied Cognitive Psychology, 24,* 107–121. doi:10.1002/acp.1548.

Boals, A., Hayslip,B. Jr., Knowles, L.R., & Banks, J.B. (2012). Perceiving a negative event as central to one's identity partially mediates age differences in posttraumatic stress disorder symptoms. *Journal of Aging and Health, 24(3),* 459-474.

Boals, A. & Murrell, A.R. (2016). I am >Trauma: Experimentally reducing event centrality and PTSD symptoms in a clinical trial. *Journal of Loss and Trauma, 21(6),* 471-483. doi: 10.1080/15325024.2015.1117930.

Brown, T. A. (2105). *Confirmatory Factor Analysis for Applied Research*. New York: Guilford Press.

Fernández-Alcántara, M., de los Santos-Roig, M., Pérez-Marfil, M.N., Catena-Martínez, A., Pérez-García, C., Martí-García, C., & Cruz-Quintana, F. Adaptation of Centrality of Event Scale (CES) to Spanish. *Universitas Psychologica, 14 (2),* 499-509. doi:10.11144/Javeriana.upsy14-2.acce.

Fitzgerald,J.M., Berntsen, D., & Broadbridge, C.L. (2016). The influence of event centrality in memory models of PTSD. Applied Cognitive Psychology, 30, 10-21.

Gauer, G., Souza, J. Á. D., Silveira, A. M. D., & Sediyama, C. Y. N. (2013). Stressful events in autobiographical memory processing: Brazilian version of the centrality of event scale. *Psicologia: Reflexão e Crítica*, *26*(1), 98-105.

Groleau, J.M., Calhoun, L.G., Cann, A., & Tedeschki, R.G. (2013). The role of centrality of events in posttraumatic distress and posttraumatic growth. *Psychological Trauma: Theory, Research, Practice, and Policy, 5(5),* 477-483. doi: 10.1037/a0028809.

Hisli N. (1989). Beck depresyon envanterinin üniversite öğrencileri için geçerliği ve güvenirliği (Reliability and validity of Beck Depression Inventory for undergraduate students). *Psikoloji Dergisi*, 7(23), 3-13.

Janoff-Bulman, R. (1988). Assumptive worlds and the stress of traumatic events: applications of the schema construct. *Social Cognition, 7*, 113–136. doi: 10.1521/soco.1989.7.2.113.

Jöroskog, K. G. & Sörbom, D. (1993). LISREL 8: Structural equation modeling with the simplis command language. Lincolnwood: Scientific Software International, Inc.

Kline, R. B. (2011). *Principles and Practice of Structural Equation Modeling*. New York: Guilford Publication.

Kocabaşoğlu N, Çorapçıoğlu Özdemir A, Yargıç İ, Geyran P. (2005). Türkçe "PTSD Checklist – Civilian Version" (PCL-C) Ölçeğinin geçerlilik ve güvenilirliği (Validity and reliability of Turkish PTSD Checklist-Civilian Version'. *Yeni Symposium,43,* 126-134.

Robinaugh, D.J. & McNally, R. (2011). Trauma centrality and PTSD symptom severity in adult survivors of childhood sexual abuse. *Journal of Traumatic Stress, 24 (4),* 483-486. doi:10.1002/jts.20656.

Rubin, D. C., Dennis, M. F., & Beckham, J. C. (2011). Autobiographical memory for stressful events: The role of autobiographical memory in posttraumatic stress disorder. *Consciousness and Cognition, 20(3),* 840-856. doi: 10.1016/j.concog.2011.03.015.

Rubin, D.C., Boals, A., & Berntsen, D. (2008). Memory in posttraumatic stress disorder: Properties of voluntary and involuntary, traumatic and nontraumatic autobiographical memories in people with and without posttraumatic stress disorder symptoms. *Journal*

of Experimental Psychology: General, 137(4), 591-614. http://dx.doi.org/10.1037/a0013165.

Rubin, D.C. & Feeling, N. (2013). Measuring the severity of negative and traumatic events. Clinical Psychological Science, 1 (4), 375-389.

Thorne, A. & McLean, K.C. (2001). *Manual for coding meaning-making in self-defining memories.* Unpublished manuscript, University of California, Santa Cruz.

Vagos, P., Riberiro da Silva, D., Brazao, N., & Rijo, D. (2016). The centrality of events scale in Portuguese adolescents: Validity evidence based on internal structure and on relations to other variables. *Assessment,* 1-12. doi: 10.1177/1073191116651137.

Vandenberg, R.J. & Lance, C.E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for the organizational research. *Organizational Research Methods, 3(1),* 4-69. doi: 10.1177/109442810031002.

Wamser-Nanney, R. Howell, K.H., Schwartz, L.E., & Hasselle, A. J. (2017). The moderating role of trauma type on the relationship between centrality of the traumatic experience and mental health. *Psychological Trauma: Theory, Research, Practice, and Policy,* doi: 10.1037/tra0000344.

Weathers, F.W., Litz, B.T., Huska, J.A., & Keane, T.M. (1994). The PTSD checklist (PCL). *Unpublished scale available from the National Center for PTSD.*

APPENDIX

OLAYLARIN MERKEZİYETİ ÖLÇEĞİ

Lütfen geriye dönüp, hayatınızdaki en stresli veya travmatik olayı düşünün ve aşağıdaki soruları, dürüst ve samimi bir şekilde 1'den 5'e kadar yer alan numaralardan birini işaretleyerek yanıtlayın.

1----------2---------- 3---------- 4---------- 5

Hiç katılmıyorum Tamamen katılıyorum

1. Bu olayın kimliğimin bir parçası haline geldiğini hissediyorum.	1	2	3	4	5
2. Bu olay, kendime ve dünyaya anlam vermemde bir dayanak noktası haline geldi.	1	2	3	4	5
3. Bu olayın, hayat hikayemin merkezi bir parçası haline geldiğini hissediyorum.	1	2	3	4	5
4. Bu olay, diğer deneyimler hakkında düşünme ve hissetme şeklimi renklendirdi.	1	2	3	4	5
5. Bu olay, kalıcı olarak hayatımı değiştirdi.	1	2	3	4	5
6. Sıklıkla bu olayın geleceğim üzerinde sahip olacağı etkiler hakkında düşünüyorum.	1	2	3	4	5
7. Bu olay hayatımda bir dönüm noktasıydı.	1	2	3	4	5