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## Research Paper

# Turkish adaptation of the scale of dissociative activities



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## ABSTRACT

**Background:** Dissociation refers to detachment, absorption, amnesia, and compartmentalization. It may work as a defense mechanism against stress and traumatic experiences. It can even take the form of forgetting or daydreaming to shift the focus away from daily experiences. A metric to quantify dissociative behaviors greatly aids in determining when these transition into pathological.

**Aims:** Therefore, this study aims to translate and adapt a scale of dissociative activities (Mayer & Farmer, 2003) into Turkish.

**Method:** Toward this end, a sample of university students and exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were used.

**Results:** According to EFA, subcategories of dissociation loaded to both factors, so one dimensional structure of the scale was deemed to solve cross-loading of subcategories. CFA provided valid evidence to one dimensional structure of the scale,  $\chi^2(527) = 1398.39$ ,  $p < 0.05$ , comparative fit index (CFI) = 0.96, standardized root mean square residual (SRMR) = 0.067, the root mean square error of approximation (RMSEA) = 0.10, 90% CI for RMSEA [0.097, 0.11]. The Cronbach alpha for the scale was 0.96 for the first ( $N = 178$ ) and second ( $N = 216$ ) data sets. Convergent validity was also determined for the translated version of this scale.

**Conclusion:** The findings from these analyses indicated that the Turkish version of the scale of dissociative activities had a one-factor structure and seemed to be reliable and valid among Turkish university students. This newly adapted scale should facilitate the diagnosis and comparative studies concerning the tendency or symptoms of dissociation.

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## Introduction

The term dissociation was first observed in the psychiatry literature at the end of the 19th century (Putman, 1989). In a general sense, reality seems to be perverted in the state of dissociation; but it might also take the form of daydreaming or forgetfulness from daily experiences. Identity confusion, absorption, amnesia and loss of control are different processes of dissociation (Vanderlinden et al., 1993). "Dissociative identity disorder, depersonalization/derealization disorder, dissociative amnesia, other specified and unspecified dissociative disorders" (pp. 291-307) are classified in the DSM-5 (American Psychiatric Association, 2013). In short, dissociation can also be defined as a continuum of experience that contains, from normal dissociative activities such as daydreaming to severe dissociative episodes such as dissociative identity disorder (Braun, 1993).

When people with dissociative patterns face unacceptable, intolerable emotions, thoughts, memories, or other personal experiences,

they use disconnection as a means to avoid and adapt to them (Sharma et al., 2016). In daily life, dissociative activities are not only experienced by several people in the form of daydreaming or forgetfulness, but dissociation is also used as a coping mechanism in order to cope with traumatic experience (Braun, 1993). In terms of defense mechanisms, individuals usually cope with stressful situations well unless there are continuing stressors and stress reactions (Amore & Serafini, 2020). Patients with higher levels of dissociation due to pseudoseizure resort to an emotion-focused type of coping, like escape or avoidance (Goldstein et al., 2000). Moreover, other psychopathological disorders like somatization, depression, and alexithymia correlate significantly with dissociative symptoms (Lipsanen et al., 2004).

In particular, dissociation is often related to physical or sexual abuse, usually experienced during childhood (Mulder et al., 1998). Accordingly, clinical studies indicate that the tendency to develop high levels of dissociative symptoms is related to more chronic childhood abuses (Chu & Dill, 1990; Kirby et al., 1993); as such, it follows that childhood traumas are positively related to dissociative activities. Furthermore, interpersonal and institutional abuse are both related to dissociation and physical health (Smith & Freyd, 2017).

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Detachment is also described as a kind of defense mechanism to minimize anxiety toward extreme threats (Sierra & Berrios, 1998). Depersonalization and derealization are common panic symptoms (Segui et al., 2000) and generally exist during acute traumatic events (Ozer et al., 2003).

Irwin (1995) found that negative effects like depression and dissociation are related to each other. Dissociation shares features with somatization in traumatic experiences. While overwhelming childhood experiences are usually excluded from conscious awareness, somatic and dissociative symptoms are their intrusive expressions (Saxe et al., 1994). Therefore, it follows that psychological symptoms are positively related to dissociative activities.

Mindfulness enables patients to tolerate and reduce intrusive emotions and experiences (Baslet & Hill, 2011). Although mindfulness and dissociation differ from each other in terms of avoiding the present moment (Williams, 2010), the observer position seems to be a shared feature. Dissociation is a kind of nonfunctional coping strategy, while mindfulness promotes acceptance and being nonjudgmental of the experiences. The acting with awareness dimension of FFMQ has a main role in relation with dissociation (Baer et al., 2006). Therefore, it is expected that mindfulness, particularly the acting with awareness dimension, is negatively related to dissociative activities.

The purpose of the present study is the translation and adaptation of the scale of dissociative activities (Mayer & Farmer, 2003) into Turkish. Previous dissociation scales include the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986) and its updated version (DES-II; Carlson & Putnam, 1993), the Questionnaire of Experiences of Dissociation (Riley, 1988), and the Dissociation Questionnaire (DIS-Q; Vanderlinden et al., 1993). The DESs (Şar, Kundakçı, et al., 1997; Yargıç et al., 1995) and DIS-Q have already been adapted (Şar, Kızıltan, et al., 1997) into Turkish, as was the Adolescent Dissociative Experiences Scale (Zoroğlu et al., 2002). Previous scales (DES-II and DIS-Q) had reliability and validity issues (Mayer & Farmer, 2003). When Mayer and Farmer (2003) developed a new scale for dissociative symptoms, they resorted to the idea that a dissociative scale should not only be applied to individuals with psychological disorders but should also be applied to individuals without this pathology because around 6% of general population exhibit high levels of dissociative activities (Mayer & Farmer, 2003; Mulder et al., 1998). Therefore, for this study, a sample of university students was considered to ensure that the resulting scale can be implemented among non-clinical individuals. The scale they developed also has high ecological validity since it takes into account patterns in the daily experiences of individuals. Additionally, the scale was aimed to assess the degree of dissociative activities from mild level to severe level since dissociation is experienced in low, moderate and high levels (Putnam et al., 1996). Roydeva and Reinders (2021) mention the importance of knowing the reasons underlying pathological-grade dissociation and the biomarkers of this disease. Therefore, having an up-to-date metric for quantifying the tendency to exhibit dissociative symptoms is valuable for diagnostic purposes.

## Methods

### Participants and procedure

The first data collection aimed to reveal the factor structure of the Scale of Dissociative Activities (SODAS) in the sample of Turkish university students. The second round of data was collected from another group of Turkish university students and examined by confirmatory factor analysis (CFA). The data that support the findings of this study are available from the corresponding author, upon reasonable request. This study was approved by the ethics committee at the second author's university (protocol number: 2021-SBB-0050, approval date: March 12, 2021) and written informed consent was obtained from the students prior to their participation in this study.

Students were provided bonus course credit in return for participation and responses were totally separate from personally identifiable information.

The number of cases needed to run an exploratory factor analysis (EFA) was determined based on the total number of items in the SODAS, which is composed of 35 items. Therefore, since at least 35 times 5 (175 cases) are needed to run the analysis, 200 was the target sample size (Comrey & Lee, 1992). By convenient sampling and online data collection, and after date screening for multivariate outliers among the 35 questions, the EFA was run with 178 cases (146 women and 32 men,  $M_{age} = 21.15$ ,  $SD = 1.63$ ). For socioeconomic class, 87.1% described themselves as middle class, and the rest as low 9.6% and high 3.4% socioeconomic classes. Concerning employment, 10.1% were working. Only 1.2% were currently in a romantic relationship. Most lived in a metropolitan (39.9%) or city center (28.7%) and the rest resided in a town 15.2%, village 12.9%, or small town 3.4%.

CFA is a type of structural equation model that requires a base of at least 200 hundred cases (Kline, 2016). Again, by convenience sampling and collecting data from university students, and after screening for multivariate outliers among the 35 questions, a CFA was run on 216 cases (164 women and 52 men,  $M_{age} = 22.27$ ,  $SD = 3.45$ ). For socioeconomic class, 88.9% described themselves as middle class, the rest as low 6.9% and high 4.2% socioeconomic classes. For having a job, 13.4% were working. Only 2.8% had a romantic relationship. Most lived in a metropolitan area (42.6%) or city center (29.2%) and the rest resided in a town 15.3%, village 11.1%, or small town 1.9%.

### Instruments

The Demographic Information Form, Volunteer Participation Form, Childhood Trauma Questionnaire (CTQ-33), Dissociation Questionnaire (DIS-Q), Scale of Dissociative Activities (SODAS), Five Facets Mindfulness Questionnaire (FFMQ), Two-Dimensional Social Desirability Scale (T-SDSD), and Brief Symptom Inventory (BSI) were completed by the participants online.

### Demographic Information Form

The demographic information form was used to collect personal information (age, sex, socioeconomic class, etc.) from the participants.

### CTQ-33

The Turkish adaptation of the original scale formed by Bernstein et al. (1994; cited in Aydemir & Köroğlu, 2012) was conducted by Şar et al. (2020). This scale generates a total score from five subscores on childhood physical, sexual, and emotional abuse, physical and emotional neglect, and a combination thereof. The internal reliability for the total scale was 0.93 ( $N = 123$ ). The reliability for the scale in the current study was 0.86.

### DIS-Q

The DIS-Q was created by Vanderlinden et al. (1993) and then adapted into Turkish (Şar, Kızıltan, et al., 1997). The scale measures the dissociation experiences in one dimension. Cronbach's alpha was 0.98 for the group ( $N = 167$ ). In this study, the internal reliability of the scale was 0.98.

### SODAS

The SODAS developed by Mayer and Farmer (2003) consists of 35 questions and measures the dissociation experiences of the individual in a one-dimensional format using a 5-point Likert-type scale. This scale was translated and adapted in the present study.

Permission to execute this study was obtained from the authors of the original scale via email. Thereafter, the original scale was translated into Turkish by two independent psychology researchers. The resulting form was given to two faculty members from the English Translation and Interpreting Department at the second author's university for back-translation. The back-translated and original English forms were then compared in terms of meaning and grammar by two psychology researchers and two faculty members from the English Translation and Interpreting Department, and modified accordingly until a consensus was reached regarding the similarity of these two versions. Thus, the Turkish-translated form was ready to collect data. In the original study, the internal consistency was 0.95 on the student sample ( $N = 533$ ) while the test-retest correlation coefficient was 0.77 ( $N = 100$ ) approximately 38 days later ( $SD = 22.95$ ). The Cronbach's alpha for the scale (for 34 items, excluding item 7) in the current study was 0.96 for the first ( $N = 178$ ) and second ( $N = 216$ ) data sets.

#### FFMQ

Baer et al. (2006) developed the Five Facets Mindfulness Questionnaire to reflect five aspects of conscious awareness. In this first study by Baer et al. (2006), the factors' internal reliability values ranged between 0.75 and 0.91. In a later study by Baer et al. (2008), the internal reliability values of factors changed between 0.72 to 0.92 ( $N = 1017$ ). Turkish adaptation was carried out by Yılmaz (2020). In Yılmaz's first study (2020), the Cronbach's alpha values of the factors varied between 0.75 and 0.90 ( $N = 263$ ), while in the second study Cronbach's alpha values were ranged between 0.72 and 0.90 ( $N = 418$ ); The Cronbach's alpha value for the total scale was 0.85 in the first, was 0.87 in the second study. The reliability was 0.85 for the acting with awareness dimension and 0.83 for the total scale in the current study.

#### T-DSDS

T-DSDS was developed by Akin (2010). It consists of two sub-dimensions: self-deception (13 items) and impression management (16 items), and measured by 5-point Likert scale. The internal reliability values were 0.95 and 0.96 for the scale dimensions: self-deception and impression management, respectively ( $N = 851$ ). The reliability was 0.82 for self-deception and 0.85 impression management dimensions and 0.90 for the total scale in the current study.

#### BSI

The original scale, created by Derogatis (1992), is based on a longer symptom identification list of 90 questions. The Brief Symptom Inventory was adapted into Turkish by Hisli-Şahin and Durak (1994). In their study, they reached a 53-question scale consisting of five sub-dimensions: "Negative Self, Somatization, Hostility, Anxiety, and Depression" (p. 130). The Cronbach's alphas for the subscales vary between 0.63 and 0.86 in four independent studies. The Cronbach's alpha values of the whole scale in four independent studies range between 0.93 and 0.96 (Hisli-Şahin & Durak, 1994). The reliability for the scale in the current study was 0.98.

#### Main Analysis

SPSS Version 26 (IBM, 2019) was used to determine the factor structure of the original scale, conduct the EFA, and also for correlation analyses between the SODAS and other scales in the first round of data. Lisrel 8.8 (Jöreskog & Sörbom, 1996) was used for the CFA of the second round of data.

At least 100 cases are required to run the EFA. At least 35 times 5 as 175 cases are needed. 200 cases are fair (Comrey & Lee, 1992). Data screening was followed (Tabachnick & Fidell, 2007). After the

list-wise deletion of cases with missing data and multivariate outliers out of 187 cases, an EFA was performed on 178 cases. Correlation of items was used to check multicollinearity, and so was a made-up regression analysis between items and a created random variable to check multivariate normality, homogeneity and homoscedasticity. Accordingly, multicollinearity, multivariate normality, and homogeneity, the data seemed good; however, the homoscedasticity was not as good. No reverse items existed in the scale.

At least 200 cases are required to run a CFA (Kline, 2016). The data for this sample were also screened for missing values and multivariate outliers (Tabachnick & Fidell, 2007). After data screening for missing data and multivariate outliers out of 232 cases, 216 cases were included in the analysis. The data seemed good in terms of multicollinearity, multivariate normality, homogeneity, and homoscedasticity.

## Results

### Exploratory factor analysis (EFA)

EFA was conducted in SPSS through Principal Axis Factoring. Bartlett's test showed that the correlation adequacy was good,  $X^2(595) = 3905.62$ ,  $p < 0.001$ . The Kaiser-Meyer-Olkin test showed that the sample was adequate ( $N = 178$ ),  $MSA = 0.93$  ( $MSA = 1$  is perfect and above 0.7 is good). Scree-plot and parallel analysis through MonteCarloPA.exe (Watkins, 2000) indicated that there should be two factors. The number of factors was fixed at two, and a direct oblimin rotation (letting factors correlate) via the maximum likelihood estimation was applied with a cut-off (0.40). After that, the distribution of the 35 items into factor groups was investigated to name the factors. The potential subcategories derealization, depersonalization, and fragmentation existed under both factors. In the first factor, items 14, 22, 26, 31, and 34 were related to depersonalization; 2, 5, 11, 18, 24, 25, 29, and 32 with derealization; 30 with derealization/cognitive avoidance; 4, 12, 15, 20, and 28 with amnesia; and finally, 6 and 23 with fragmentation. In the second factor, items 1, 9, 19, and 35 were related to focusing; 2 and 13 with derealization/absorption; 3, 16, and 27 with depersonalization; 17 with absorption; 10, 21, and 33 with derealization; and finally, 8 with the loss of control. Although item 7 was related to fragmentation, it did not load to any factor above 0.30, therefore, question 7 was excluded in further analysis. Thus, the scale was deemed best-suited as a one-factor metric, as in the original study (Mayer & Farmer, 2003). EFA showed that the one-factor structure explained 41.85% of the variance. The loading of the items fluctuated between 0.77 and 0.44. The order of the items' loading to the scale is presented in Table 1.

### Confirmatory factor analysis (CFA)

To supply evidence for the one-factor structure of the SODAS, a CFA was run in another group of university students. This CFA was carried out to observe how the dissociation construct was related to each question of the SODAS using Lisrel 8.8. The goodness-of-fit indices of the analysis output values were evaluated according to Hu and Bentler (1999). When the comparative fit index (CFI) exceeds 0.95, it shows a perfect fit; when standardized root mean square residual (SRMR) is less than 0.08, it is a good fit; when the root mean square error of approximation (RMSEA) is less than 0.06, it is a good fit, and when the RMSEA is between 0.8 and 0.10, it indicates a mediocre fit, and also, narrower CIs are preferred. The estimated one-factor structure for the SODAS fit the data,  $Chi^2(527) = 1398.39$ ,  $p < 0.05$ ,  $CFI = 0.96$ ,  $SRMR = 0.067$ ,  $RMSEA = 0.10$ , 90% CI for the RMSEA [0.097, 0.11]. The reason for a p-value to be smaller than 0.05 might be due to the smaller sample size. The standardized estimates of items with latent construct dissociation fluctuated between 0.42 and 0.81, which can be followed in Fig. 1. The loading of questions (items) was similar

**Table 1**  
Item loadings, eigenvalue, proportion of variance explained and reliability value of the scale of dissociative activities.

Cronbach's $\alpha$ : 0.96 Explained variance: 41.85% Eigenvalue: 14.65	
Item	Loading of Items
11. There are times when I have difficulty distinguishing what I thought about doing from what I actually did do.	.77
26. I have difficulty describing what I am experiencing on the inside because those experiences are so mixed up or confused.	.76
32. When I engage in some type of behavior or activity, I am mentally disconnected from what I am doing.	.73
21. I have feelings of emptiness.	.72
9. When I listen to people speak, I "space out" or have difficulty attending to what they say.	.71
31. There are occasions when I have the experience of watching myself and feeling like I am watching another person.	.71
27. There are times when I am overcome by feelings of non-existence or nothingness.	.71
14. I feel numb.	.71
12. There are periods during which I "lose time," or am unaware of what happened during extended periods of time.	.71
16. There are times when I feel a deep, dark void within me.	.71
35. When alone, I have difficulty focusing my attention in the present.	.69
10. There are times when I feel like I am in a daze or trance.	.69
33. I or others have noticed that at times I stare off into space and seem disconnected from what is going on around me.	.69
18. There are occasions when people who I know momentarily seem unfamiliar to me.	.69
20. There are times when I find myself emerge from a period during which I had clearly been doing something, but I cannot remember what it was that I was doing.	.68
6. There are periods when I experience myself as having different personalities.	.67
3. I have periods when I feel like I am detached or separate from my body.	.65
34. I have had the feeling that my body was an empty shell.	.65
22. I am bothered by not having a clear sense of who I really am.	.65
5. There are times when places that were once familiar to me appear strange or different.	.64
23. There are occasions when I have the experience of hearing sounds associated with my past, even though there is nothing in my present environment that produced those sounds.	.64
29. There have been times when I had difficulty deciding whether my environment was real or part of a dream.	.60
24. I have experiences where I find myself questioning if aspects of the environment I am in are real.	.60
28. When I walk, drive, or ride a bicycle, I have the experience of wondering what I was doing during the various points along the way.	.60
2. My mind wanders off.	.59
19. I have difficulty focusing my attention or concentration for long periods of time.	.59
17. There are periods when I lose my sense of how much time has gone by.	.57
1. I have difficulty staying mentally engaged when I participate in routine tasks.	.56
4. There are occasions when I discover that I have done something even though I have no recollection of doing it.	.54
8. There are times when I feel I have little control over my actions or behavior.	.54
15. I find things in my possession which I don't remember acquiring.	.51
25. When I imagine experiences or events or when I daydream, it seems like what I am imagining is actually occurring.	.50

(continued)

**Table 1 (Continued)**

Cronbach's $\alpha$ : 0.96 Explained variance: 41.85% Eigenvalue: 14.65	
Item	Loading of Items
30. When I perceive my situation as threatening, punishing, or dangerous, I respond by "spacing out" or by mentally "checking out" from the situation.	.44
13. I engage in daydreaming.	.44
7. I take comfort in retreating into my own inner world.	–

to the EFA results. The CFA also seemed to support a one-factor structure for the SODAS.

*Convergent validity*

The SODAS was investigated in terms of validity. The scale significantly converged with childhood trauma, psychological symptoms, an independent dissociation scale (DIS-Q), the mindfulness trait, the act with awareness dimension of mindfulness, social desirability, and the self-deception and impression management dimensions of social desirability. The correlations between SODAS and childhood traumas, psychological symptoms, trait mindfulness, and the act with awareness dimension of mindfulness were all in the expected directions. For the correlation of the SODAS with the concerned scales, see Table 2. All scales correlated negatively with social desirability and none of the correlations was high. The SODAS correlated highly, but not perfectly with the DIS-Q, which indicates that they might be measuring different elements of dissociation.

**Discussion**

Here we describe the translation and adaptation of a new measure of the SODAS (Mayer & Farmer, 2003) into Turkish. First, an EFA was conducted to investigate the factor structure, which showed that there were two dimensions as opposed to the one-dimensional form of the original scale (Mayer & Farmer, 2003). The sub-categories derealization, depersonalization, and fragmentation existed under both factors, which is why the final decision was made to consider this a one-factor scale, as in the original study (Mayer & Farmer, 2003). The rest of the analysis also showed that the one-factor structure explained 41.85% of the variance (Table 1). The factor loading of item 7 was below 0.30 so, this item was excluded from further analysis.

Next, the CFA run to examine the one-factor structure of the SODAS revealed that the loading of the items was similar to the results of the EFA; thus supporting the one-factor structure of the SODAS (Table 1 and Fig. 1). In this study, both EFA and CFA were applied to provide evidence for the one-dimensional-factor structure of this scale since factor analyses were omitted from the original study.

Subsequently the correlations between the SODAS and other independent scales were investigated in terms of validity. While the SODAS correlated positively with childhood trauma, psychological symptoms, and another dissociation scale (DIS-Q), it had a negative relationship with mindfulness and social desirability (Table 2). All of the scales negatively correlated with social desirability except mindfulness, and none of the correlations was high.

Those who exhibit dissociative behaviors are trying to escape mentally and avoiding facing intolerable mental contents when they experience distress (Schauer & Elbert, 2010). Accordingly, trauma is related to dissociation (Carlson et al., 2016; Terock et al., 2016). The findings of Mendoza et al. (2011) support that dissociation can be comorbid with excessive anxiety (e.g., panic attacks). Furthermore, depression, pessimism, and anxiety possess a negative content value (e.g., Nolen-Hoeksema, 1991) and ruminative thought structure, which is predictive of dissociation (Vannikov-Lugassi & Soffer-



**Table 2**  
Means, standard deviations and correlations of scale of dissociative activities with concerned scales.

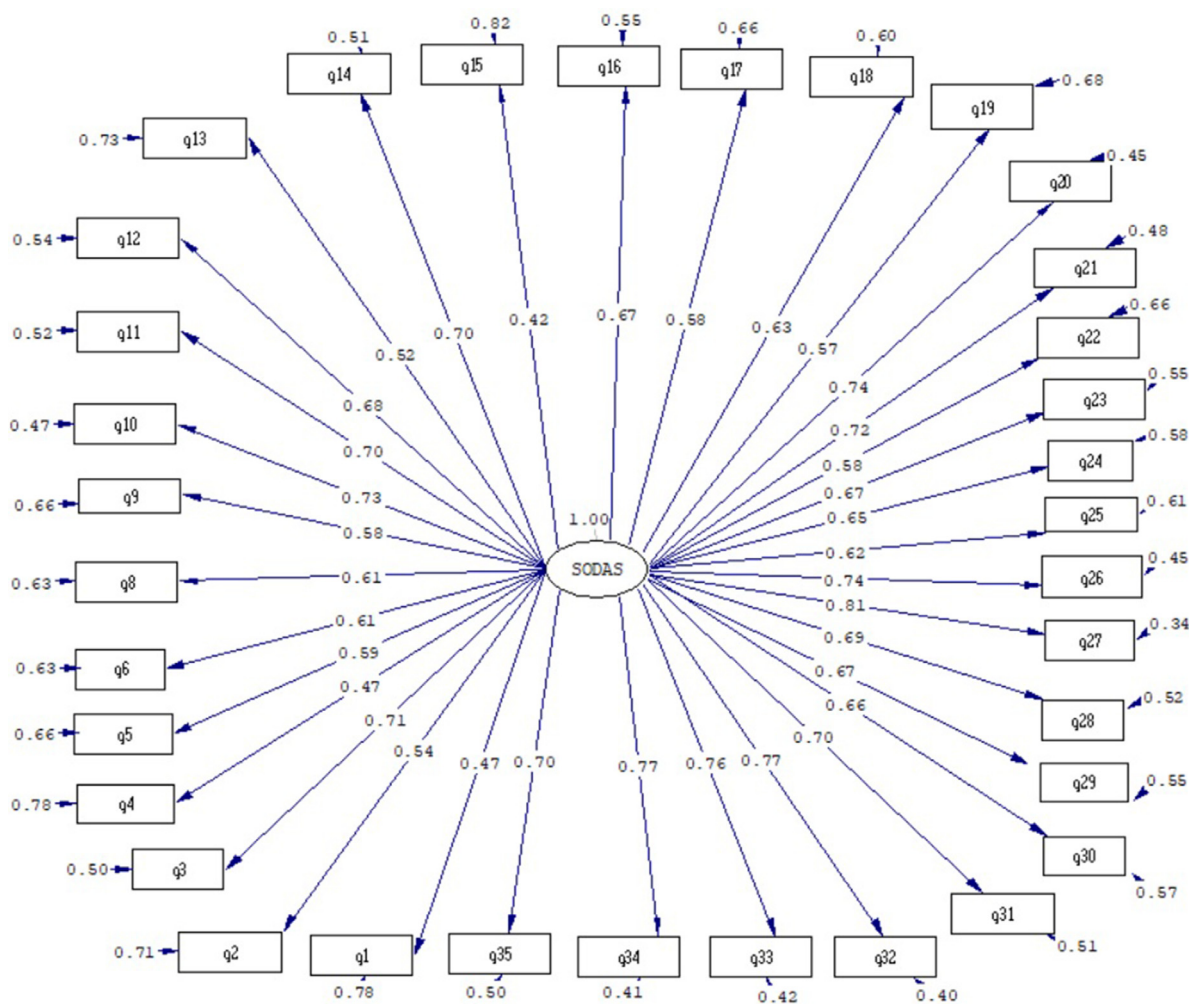
Variable	M	SD	1	2	3	4	5	6	7	8	9
1. SODAS	71.37	21.83	–								
2. CTQ-33	49.03	14.14	<b>.51**</b>	–							
3. BSI	121.87	40.38	<b>.68**</b>	<b>.52**</b>	–						
4. DIS-Q	126.29	41.68	<b>.69**</b>	<b>.41**</b>	<b>.69**</b>	–					
5. FFMQ	125.99	15.05	<b>-.65**</b>	<b>-.40**</b>	<b>-.52**</b>	<b>-.49**</b>	–				
6. ActwithAwe	27.47	5.93	<b>-.67**</b>	<b>-.33**</b>	<b>-.53**</b>	<b>-.53**</b>	<b>.69**</b>	–			
7.T-DSDS	102.78	15.08	<b>-.28**</b>	<b>-.34**</b>	<b>-.29**</b>	<b>-.22**</b>	<b>.44**</b>	<b>.20**</b>	–		
8. Self Deception	43.56	7.15	<b>-.28**</b>	<b>-.28**</b>	<b>-.28**</b>	<b>-.13</b>	<b>.44**</b>	<b>.20**</b>	<b>.87**</b>	–	
9. ImpressionM	59.21	9.50	<b>-.24**</b>	<b>-.32**</b>	<b>-.24**</b>	<b>-.26**</b>	<b>.36**</b>	<b>.16*</b>	<b>.93**</b>	<b>.63**</b>	–

Note. SODAS: Scale of dissociative activities, CTQ-33: Childhood Trauma Scale, BSI: Brief Symptom Inventory, DIS-Q: Dissociation Questionnaire, FFMQ: Five Facets Mindfulness Questionnaire, ActwithAwe: The act with awareness dimension of FFMQ, T-DSDS: Two-Dimensional Social Desirability Scale, Self Deception and ImpressionM (Impression Management) are two dimensions of T-DSDS. High correlations are bolded.

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

Dudek, 2018). In the present study, as dissociative activities increased, the mindfulness scores of the participants decreased (Table 2). Accordingly, a mindful brain is tied to reality while a dissociated one is more concerned with distorting reality (Forner, 2019).

Finally, the SODAS was found to correlate positively with childhood trauma. That pathological dissociation positively relates to severe childhood trauma has already been established in the literature (Kaplan et al., 1998; Şar, 2020). More recently,



**Fig. 1.** Hierarchical model of dissociation with questions of SODAS  
Note. Standardized maximum likelihood estimates among dissociation (SODAS) and 34 questions (except question 7) are significant at  $p < .05$ . SODAS: stands for latent factor dissociation. Error terms of questions are also in the figure.

Schäfer et al. (2010) added that the harshness of childhood trauma is related to the degree of dissociative symptoms.

### Limitations and recommendations

The sample sizes used for the first and second data collections were sufficient, yet the EFA results could be improved by increasing the sample size to 300 hundred cases or more (Comrey & Lee, 1992). The CFA was conducted on 216 cases, which satisfied the sample size criterion. However, since fit indices are associated with sample size (e.g., Shi et al., 2019), a larger sample would give better fit indices in the CFA. Moreover, the sample size could be considered in terms of factor structure, the larger the sample is, the more factors are likely to occur.

The present study was based on university students who represented a non-clinical sample. For a scale concerning dissociation, it is expected to run the study with a clinical sample. Nonetheless, the SODAS (Mayer & Farmer, 2003) was originally developed in a sample of university students so that it could be applied to non-clinical individuals going forward. Using this newly adapted Turkish form of the SODAS in future studies on clinical samples will contribute to the external and concurrent validities of the scale, thereby evidencing that the scale is valid in clinical samples and also able to distinguish individuals with respect to the severity of their condition. This scale can also be applied to both pathological and non-pathological samples to check its distinctiveness. Moreover, some evidence might be supplied to the external validity of the adapted SODAS by conducting a study among non-university students.

In this study, the adapted form of the DES (Şar, Kundakçı, et al., 1997; Yargıç et al., 1995) was not used to determine the convergent validity of the SODAS. Instead, the DIS-Q (Şar, Kızıltan, et al., 1997) was used solely to decrease the number of scales and to not tire and confuse the participants. The DES could also be used to supply more evidence for the validity of the SODAS. Thus, the nature of the relationship between the SODAS and DES could be compared with that between the SODAS and DIS-Q to further describe the convergent validity of the SODAS, as done by Mayer and Farmer (2003).

In the current study, T-DSDS which composed of two dimensions was used to show the associations of social desirability with concerned scales. However, the self-deceptive denial dimension of social

### Appendix

#### Türkçe Dissosiyatif Eylemler Ölçeği:T-DEÖ (Turkish-Scale of Dissociative Activities:T-SODAS)

Yönergeler: Bu ölçek belli eylemleri ne sıklıkta yaşadığınızı sormaktadır. 1'den 5'e kadar size uygun puanlamayı seçiniz. 1 = Hiçbir zaman, 2 = Nadiren, 3 = Kimi zaman, 4 = Sık olarak, 5 = Çok sık

1	Sıradan işleri yaparken zihinsel olarak odaklanmakta güçlük çekerim. (I have difficulty staying mentally engaged when I participate in routine tasks.)	1	2	3	4	5
2	Zihnim dalıp gider. (My mind wanders off.)	1	2	3	4	5
3	Bedenimden ayrılmışım ya da ayrılmışım gibi hissettiğim zamanlar olur. (I have periods when I feel like I am detached or separate from my body.)	1	2	3	4	5
4	Bir şeyi yaptığımı hatırlamadığım halde, yapmış olduğumu (sonradan) fark ettiğim durumlar olur. (There are occasions when I discover that I have done something even though I have no recollection of doing it.)	1	2	3	4	5
5	Bir zamanlar tanıdık olan yerlerin bana yabancı veya farklı geldiği zamanlar olur. (There are times when places that were once familiar to me appear strange or different.)	1	2	3	4	5
6	Farklı kişiliklerim varmış gibi yaşadığım anlar olur. (There are periods when I experience myself as having different personalities.)	1	2	3	4	5
7*	İç dünyama sığınmak beni rahatlatır. (I take comfort in retreating into my own inner world.)	1	2	3	4	5
8	Eylemlerim veya davranışlarım üzerinde çok az kontrole sahip olduğumu hissettiğim zamanlar olur. (There are times when I feel I have little control over my actions or behavior.)	1	2	3	4	5
9	İnsanların konuşmalarını dinlerken, zihnen kopmuş veya söylenenlere odaklanmakta zorlandığım anlar olur. (When I listen to people speak, I "space out" or have difficulty attending to what they say.)	1	2	3	4	5

(continued)

desirability also exists (Paulhus, 2002). The updated social desirability scale should be used in future studies. Moreover, students were provided bonus course credit in return for participation, which could lead to social desirability of the participants. Since the data collection was online and their responses were totally separate from personally identifiable information, the effect of social desirability could not be large.

### Conclusion

SODAS is a metric that aids to determine the symptoms of dissociation. The Turkish adapted metric also has one dimensional structure similar to the original scale. Thus, this up-to-date adapted scale described in the present study may be used to determine the tendency of dissociation so that required interventions and precautions can be applied to prevent the development of a dissociative psychological disorder. Furthermore, the scale may facilitate potential comparative studies.

### Authorship

Both of the authors made substantial contributions to all of the following steps: (1) the conception and design of the study, acquisition of data, and analysis and interpretation of data, (2) drafting the article and revising it critically for important intellectual content, and (3) final approval of the version to be submitted.

**Data Availability Statement:** The data that support the findings of this study are available from the corresponding author, upon reasonable request.

### Conflict of interest

The authors declare that there is no conflict of interest.

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10	Serssem ya da trans halindeymişim gibi hissettiğim anlar olur. (There are times when I feel like I am in a daze or trance.)	1	2	3	4	5
11	Yaptığımı düşündüğüm şey ile gerçekte ne yaptığımı ayırt etmekte zorlandığım anlar olur. (There are times when I have difficulty distinguishing what I thought about doing from what I actually did do.)	1	2	3	4	5
12	"Zamanı kaybet"tiğim veya uzun süreler boyunca ne olduğunu farkında olmadığım zamanlar olur. (There are periods during which I "lose time," or am unaware of what happened during extended periods of time.)	1	2	3	4	5
13	Hayallere dalıp giderim. (I engage in daydreaming.)	1	2	3	4	5
14	Uyuşmuş hissedirim. (I feel numb.)	1	2	3	4	5
15	Aldığımı hatırlamadığım şeyleri kendi eşyalarım arasında bulurum. (I find things in my possession which I don't remember acquiring.)	1	2	3	4	5
16	İçimde derin karanlık bir boşluk hissettiğim zamanlar olur. (There are times when I feel a deep, dark void within me.)	1	2	3	4	5
17	Ne kadar zamanın geçtiğini fark etmediğim zamanlar olur. (There are periods when I lose my sense of how much time has gone by.)	1	2	3	4	5
18	Tanıdığım insanların bir anlığına yabancıymış gibi görüldüğü durumlar olur. (There are occasions when people who I know momentarily seem unfamiliar to me.)	1	2	3	4	5
19	Uzun süre dikkatimi toplamakta veya konsantrasyon olmakta güçlük çekerim. (I have difficulty focusing my attention or concentration for long periods of time.)	1	2	3	4	5
20	Bariz bir şekilde bir şeyler yaptığım bir dönemden çıktığım, ancak ne yaptığımı hatırlamadığım zamanlar olur. (There are times when I find myself emerge from a period during which I had clearly been doing something, but I cannot remember what it was that I was doing.)	1	2	3	4	5
21	Boşluk hislerim vardır. (I have feelings of emptiness.)	1	2	3	4	5
22	Gerçekten kim olduğuma dair net bir algımın olmaması beni rahatsız eder. (I am bothered by not having a clear sense of who I really am.)	1	2	3	4	5
23	Mevcut çevremde geçmişimle ilişkili şeyleri hatırlatan bir şey olmamasına rağmen geçmişle ilgili sesler duyduğum olur. (There are occasions when I have the experience of hearing sounds associated with my past, even though there is nothing in my present environment that produced those sounds.)	1	2	3	4	5
24	İçinde bulunduğum çevrenin bazı yönlerinin gerçek olup olmadığını sorgularken kendimi bulduğum deneyimlerim olur. (I have experiences where I find myself questioning if aspects of the environment I am in are real.)	1	2	3	4	5
25	Deneyimleri veya olayları hayal ederken ya da düş kurarken, hayal ettiğim şeyin gerçekten oluyormuş gibi görüldüğü olur. (When I imagine experiences or events or when I daydream, it seems like what I am imagining is actually occurring.)	1	2	3	4	5
26	İçimdeki deneyimler çok karmaşık veya kafa karıştırıcı olduğundan, ne deneyimlediğimi tarif etmekte zorluk çekerim. (I have difficulty describing what I am experiencing on the inside because those experiences are so mixed up or confused.)	1	2	3	4	5
27	Hiçlik ve boşluk duygularının beni ele geçirdiği anlar olur. (There are times when I am overcome by feelings of non-existence or nothingness.)	1	2	3	4	5
28	Yürürken, araba veya bisiklet sürerken yol boyunca farklı noktalarda ne yaptığımdan şüphelendiğim deneyimlerim olur. (When I walk, drive, or ride a bicycle, I have the experience of wondering what I was doing during the various points along the way.)	1	2	3	4	5
29	Etrafımdaki çevrenin gerçek mi yoksa bir rüyanın parçası mı olduğuna karar vermekte zorlandığım zamanlar olur. (When I walk, drive, or ride a bicycle, I have the experience of wondering what I was doing during the various points along the way.)	1	2	3	4	5
30	Bulduğum durumu tehdit edici, cezalandırıcı ve tehlikeli olarak algıladığımda, boşluğa dalıp veya durumdan zihinsel olarak uzaklaşıp bu durumdan kurtulurum. (When I perceive my situation as threatening, punishing, or dangerous, I respond by "spacing out" or by mentally "checking out" from the situation.)	1	2	3	4	5
31	Kendimi izlediğim ve sanki başka birini izliyormuşum gibi hissettiğim durumlar olur. (There are occasions when I have the experience of watching myself and feeling like I am watching another person.)	1	2	3	4	5
32	Bazı türde davranış ve faaliyetlerde bulunurken yaptığım şeyden zihinsel olarak kopduğum olur. (When I engage in some type of behavior or activity, I am mentally disconnected from what I am doing.)	1	2	3	4	5
33	Boşluğa dalıp gittiğimi ve etrafımda olan şeylerden kopuk görüldüğümü; benim ya da yanımdakilerin fark ettiği zamanlar vardır. (I or others have noticed that at times I stare off into space and seem disconnected from what is going on around me.)	1	2	3	4	5
34	Vücudumun boş bir kabuk olduğu hissine kapılmışlığım vardır. (I have had the feeling that my body was an empty shell.)	1	2	3	4	5
35	Yalnızken dikkatimi şu ana vermekte zorluk yaşarım. (When alone, I have difficulty focusing my attention in the present.)	1	2	3	4	5

Note. There is no reverse item. Turkish form of this questionnaire may be used without permission. \*Question 7 was excluded from the scale with respect to Factor Analyses.

## References

- Akın, A. (2010). Two-Dimensional Social Desirability Scale: The study of validity and reliability. *Gazi University Journal of Gazi Educational Faculty (GUJGEF)*, 30(3), 771–784.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- Amore, M., & Serafini, G. (2020). Early stress and dissociation: Psychopathological pathways. *Journal of Psychopathology*, 26, 54–69. doi:10.36148/2284-0249-362.
- Aydemir, Ö., & Köroğlu, E. (2012). Psikiyatride kullanılan klinik ölçekler (6. Baskı) [*Clinical Scales used in Psychiatry* (6th ed.)]. Hekimler Yayın Birliği.
- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, 13, 27–45. doi:10.1177/1073191105283504.
- Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., Walsh, E., Duggan, D., & Williams, J. M. G. (2008). Construct validity of the five facets mindfulness questionnaire in meditating and nonmeditating samples. *Assessment*, 15(3), 329–342. doi:10.1177/1073191107313003.
- Baslet, G., & Hill, J. (2011). Case report: Brief mindfulness-based psychotherapeutic intervention during inpatient hospitalization in a patient with conversion and dissociation. *Clinical Case Studies*, 10(2), 95–109. doi:10.1177/1534650110396359.
- Bernstein, E. M., & Putnam, F. W. (1986). Development, reliability and validity of a dissociation scale. *Journal of Nervous and Mental Disease*, 174(12), 727–735. doi:10.1097/00005053-198612000-00004.
- Braun, B. G. (1993). Multiple personality disorder and post traumatic stress disorder: Similarities and differences. In J. P. Wilson, & B. Raphael (Eds.), *International handbook of traumatic stress syndromes* (pp. 35–47). Plenum Press.
- Carlson, E. B., Field, N. P., Ruzek, J. I., Bryant, R. A., Dalen, C. J., Keane, T. M., & Spain, D. A. (2016). Advantages and psychometric validation of proximal intensive assessments of patient-reported outcomes collected in daily life. *Quality of Life Research*, 25(3), 507–516. doi:10.1007/s11136-015-1170-9.
- Carlson, E. B., & Putnam, F. W. (1993). An update on the dissociative experiences scale. *Dissociation*, 4(1), 16–27. Retrieved from [https://www.researchgate.net/publication/232515683\\_An\\_Update\\_on\\_the\\_Dissociative\\_Experiences\\_Scale](https://www.researchgate.net/publication/232515683_An_Update_on_the_Dissociative_Experiences_Scale).
- Chu, J. A., & Dill, D. L. (1990). Dissociative symptoms in relation to childhood physical and sexual abuse. *The American Journal of Psychiatry*, 147(7), 887–892. doi:10.1176/ajp.147.7.887.
- Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis*. Psychology Press.
- Derogatis, L. R. (1992). *The Brief Symptom Inventory-BSI administration, scoring and procedures manual-II*. USA: Clinical Psychometric Research Inc.
- Fornier, C. (2019). What mindfulness can learn about dissociation and what dissociation can learn from mindfulness. *Journal of Trauma and Dissociation*, 20(1), 1–15. doi:10.1080/15299732.2018.1502568.
- Goldstein, L. H., Drew, C., Mellers, J., Mitchell-O'Malley, S., & Oakley, D. A. (2000). Dissociation, hypnotizability, coping styles and health locus of control: Characteristics of pseudoseizure patients. *Seizure*, 9(5), 314–322. doi:10.1053/seiz.2000.0421.
- Hişli-Şahin, N., & Durak, A. (1994). The validity, reliability and factor structure of the brief symptom inventory (BSI). *Turkish Journal of Psychology*, 9(31), 44–56. Retrieved from [https://www.researchgate.net/publication/285023292\\_Kisa\\_Semp\\_tom\\_Envanteri\\_Turk\\_gencleri\\_icin\\_uyarlanmasi](https://www.researchgate.net/publication/285023292_Kisa_Semp_tom_Envanteri_Turk_gencleri_icin_uyarlanmasi).
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. doi:10.1080/1070519990540118.
- IBM Corp. (2019). *IBM SPSS Statistics for Windows, Version 26.0*. Armonk, NY: IBM Corp.
- Irwin, H. J. (1995). Affective predictors of dissociation, III: Affect balance. *The Journal of Psychology*, 129(4), 463–467. doi:10.1080/00223980.1995.9914981.
- Jöreskog, K. G., & Sörbom, D. (1996). *LISREL 8: User's reference guide*. Scientific Software International.
- Kaplan, M. L., Erensaft, M., Sanderson, W. C., Wetzler, S., Foote, B., & Asnis, G. M. (1998). Dissociative symptomatology and aggressive behavior. *Comprehensive Psychiatry*, 39(5), 271–276. doi:10.1016/S0010-440X(98)90035-9.
- Kirby, J. S., Chu, J. A., & Dill, D. L. (1993). Correlates of dissociative symptomatology in patients with physical and sexual abuse histories. *Comprehensive Psychiatry*, 34(4), 258–263. doi:10.1016/0010-440X(93)90008-R.
- Kline, R. B. (2016). *Principles and practice of structural equation modeling*. The Guilford Press.
- Lipsanen, T., Saarijärvi, S., & Lauerma, H. (2004). Exploring the relations between depression, somatization, dissociation and alexithymia—overlapping or independent constructs? *Psychopathology*, 37(4), 200–206. doi:10.1159/000080132.
- Mayer, J. L., & Farmer, R. F. (2003). The development and psychometric evaluation of a new measure of dissociative activities. *Journal of Personality Assessment*, 80(2), 185–196. doi:10.1207/S15327752JPA8002\_07.
- Mendoza, L., Navinés, R., Crippa, J. A., Fagundo, A. B., Gutierrez, F., Nardi, A. E., Bulbena, A., Valdés, M., & Martín-Santos, R. (2011). Depersonalization and personality in panic disorder. *Comprehensive Psychiatry*, 52(4), 413–419. doi:10.1016/j.comppsy.2010.09.002.
- Mulder, R. T., Beautrais, A. L., Joyce, P. R., & Fergusson, D. M. (1998). Relationship between dissociation, childhood sexual abuse, childhood physical abuse, and mental illness in a general population sample. *American Journal of Psychiatry*, 155(6), 806–811. doi:10.1176/ajp.155.6.806.
- Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology*, 100(4), 569–582. doi:10.1037/0021-843X.100.4.569.
- Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin*, 129(1), 52–73. doi:10.1037/0033-2909.129.1.52.
- Paulhus, D. L. (2002). Socially desirable responding: The evolution of a construct. In H. I. Braun, D. N. Jackson, D. E. Wiley (Eds.), *The role of the constructs in psychological and educational measurement* (pp. 49–69). Lawrence Erlbaum Associates.
- Putnam, F. W. (1989). Pierre Janet and modern views of dissociation. *Journal of Traumatic Stress*, 2(4), 413–429. doi:10.1002/jts.2490020406.
- Putnam, F. W., Carlson, E. B., Ross, C. A., Anderson, G., Clark, P., Torem, M., Bowman, E. S., Coons, P., Chu, J. A., Dill, D. L., Loewenstein, R. J., & Braun, B. G. (1996). Patterns of dissociation in clinical and non-clinical samples. *Journal of Nervous and Mental Disease*, 184(11), 673–679. doi:10.1097/00005053-199611000-00004.
- Riley, K. C. (1988). Measurement of dissociation. *Journal of Nervous and Mental Disease*, 176(7), 449–450. doi:10.1097/00005053-198807000-00008.
- Roydeva, M. I., & Reinders, A. A. T. S. (2021). Biomarkers of pathological dissociation: A systematic review. *Neuroscience and Biobehavioral Reviews*, 123, 120–202. doi:10.1016/j.neubiorev.2020.11.019.
- Saxe, G. N., Chinman, G., Berkowitz, R., Hall, K., Lieberg, G., Schwartz, J., & Van der Kolk, B. A. (1994). Somatization in patients with dissociative disorders. *American Journal of Psychiatry*, 151(9), 1329–1334. doi:10.1176/ajp.151.9.1329.
- Schauer, M., & Elbert, T. (2010). Dissociation following traumatic stress. *Zeitschrift für Psychologie/Journal of Psychology*, 218(2), 109–127. doi:10.1027/0044-3409/a000018.
- Schäfer, I., Langeland, W., Hissbach, J., Luedecke, C., Ohlmeier, M. D., Chodzinski, C., Kemper, U., Keiper, P., Wedekind, D., Havemann-Reinecke, U., Teunissen, S., Weirich, S., Driessen, M., & the TRAUMAB-Study group (2010). Childhood trauma and dissociation in patients with alcohol dependence, drug dependence, or both A multi-center study. *Drug and Alcohol Dependence*, 109(1-3), 84–89. doi:10.1016/j.drugalcdep.2009.12.012.
- Seguí, J., Marquez, M., Garcia, L., Canet, J., Salvador-Carulla, L., & Ortiz, M. (2000). Depersonalization in panic disorder: A clinical study. *Comprehensive Psychiatry*, 41(3), 172–178. doi:10.1016/S0010-440X(00)90044-0.
- Sharma, T., Sinha, V. K., & Sayeed, N. (2016). Role of mindfulness in dissociative disorders among adolescents. *Indian Journal of Psychiatry*, 58(3), 326–328. doi:10.4103/0019-5545.192013.
- Shi, D., Lee, T., & Maydeu-Olivares, A. (2019). Understanding model size effect on SEM fit indices. *Educational and Psychological Measurement*, 79(2), 310–334. doi:10.1177/0013164418783530.
- Sierra, M., & Berrios, G. E. (1998). Depersonalization: Neurobiological perspectives. *Biological Psychiatry*, 44(9), 898–908. doi:10.1016/S0006-3223(98)00015-8.
- Smith, C. P., & Freyd, J. J. (2017). Insult, then injury: Interpersonal and institutional betrayal linked to health and dissociation. *Journal of Aggression, Maltreatment and Trauma*, 26(10), 1117–1131. doi:10.1080/10926771.2017.1322654.
- Şar, V. (2020). Childhood trauma and dissociative disorders. In G. Spalletta, D. Janiri, F. Piras, G. Sani (Eds.), *Childhood trauma in mental disorders: A comprehensive approach* (pp. 333–365). Springer Publishing.
- Şar, V., Kızıltan, E., Kundakçı, T., Bakım, B., & Yargıç, L.İ. (1997). *Dissosiyasyon Ölçeğinin (DIS-Q) geçerlik ve güvenilirliği* [Validity and reliability of the Turkish Version of the Dissociation Questionnaire (DIS-Q)]. *Oral presentation in 33th National Psychiatry Congress, Antalya*.
- Şar, V., Kundakçı, T., Kızıltan, E., Bakım, B., Yargıç, L.İ., & Tutkun, H. (1997). *Dissosiyatif Yaşantılar Ölçeğinin (DES-II) geçerlik ve güvenilirliği* [Validity and reliability of the Turkish version of the dissociative experiences scale (DES-II)]. *Oral presentation in 33th National Psychiatry Congress, Antalya*.
- Şar, V., Nefeç, I., Mutluer, T., Fatih, P., & Türk-Kurtça, T. (2020). A revised and expanded version of the Turkish Childhood Trauma Questionnaire (CTQ-33): Overperception-overcontrol as additional factor. *Journal of Trauma and Dissociation*, 22(1), 35–51. doi:10.1080/15299732.2020.1760171.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Boston, MA: Pearson.
- Terock, J., Van der Auwera, S., Janowitz, D., Spitzer, C., Barnow, S., Miertsch, M., Freyberger, H. J., & Grabe, H.-J. (2016). From childhood trauma to adult dissociation: The role of PTSD and alexithymia. *Psychopathology*, 49(5), 374–382. doi:10.1159/000449004.
- Vanderlinden, J., Van Dyck, R., Vandereycken, W., Vertommen, H., & Jan Verkes, R. (1993). The dissociation questionnaire (DIS-Q): Development and characteristics of a new self-report questionnaire. *Clinical Psychology and Psychotherapy*, 1(1), 21–27. doi:10.1002/cpp.5640010105.
- Vannikov-Lugassi, M., & Soffer-Dudek, N. (2018). Rumination and dissociation: The mediating role of poor sleep quality and presleep cognitions. *Psychology of Consciousness: Theory, Research, and Practice*, 5(2), 185–211. doi:10.1037/cns0000128.
- Watkins, M. W. (2000). *Monte Carlo PCA for parallel analysis (Computer Software)*. State College, PA: Ed & Psych Associates.
- Williams, J. M. G. (2010). Mindfulness and psychological process. *Emotion*, 10(1), 1–7. doi:10.1037/a0018360.
- Yargıç, L.İ., Tutkun, H., & Şar, V. (1995). The reliability and validity of the Turkish version of Dissociative Experiences Scale. *Dissociation*, 8(1), 10–13. Retrieved from [https://www.researchgate.net/publication/232527881\\_The\\_reliability\\_and\\_validity\\_of\\_the\\_Turkish\\_version\\_of\\_the\\_Dissociative\\_Experiences\\_Scale](https://www.researchgate.net/publication/232527881_The_reliability_and_validity_of_the_Turkish_version_of_the_Dissociative_Experiences_Scale).
- Yılmaz, F. (2020). Mediating role of coping with stress styles in relation between mindfulness and basic psychological needs satisfaction (*Unpublished Doctoral Dissertation*). Ankara, Turkey: Middle East Technical University.
- Zoroğlu, S. S., Şar, V., Tuzun, U., Tutkun, H., & Savaş, H. A. (2002). Reliability and validity of the Turkish version of the adolescent dissociative experiences scale. *Psychiatry and Clinical Neurosciences*, 56(5), 551–556. doi:10.1046/j.1440-1819.2002.01053.x.