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ARAŞTIRMA Açık Erişim

Adaptation of Secondary Traumatic Stress Scale to Turkish for Social Media Users: Reliability and Validity Study

Sosyal Medya Kullanıcıları İçin İkincil Travmatik Stres Ölçeği'nin Türkçe'ye Uyarlanması: Güvenirlik ve Geçerlik Çalışması

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ABSTRACT

When the literature is analysed, the gap in the researches related to STS for social media users is big. This study aims to adapt the Secondary Traumatic Stress Scale (STSS-SM) for Social Media Users to Turkish, which will contribute to filling the gap in social media users. In the study, data of 708 participants aged 18-26 were analysed. Validity and reliability study of STSS-SM was carried out and its three-factor structure was examined. According to the findings in adaptation to Turkish, STSS-SM consists of a single-factor structure rather than a three-factor structure as in the original. EFA results indicate that scale items can be collected under this single-factor structure. In conclusion, based on validity and reliability studies, it can be said that the Turkish version of STSS-SM is applicable in scientific studies.

Article Information

Keywords
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ÖZET

Literatür incelendiğinde sosyal medya kullanıcı için İTS ile ilgili araştırmalarında büyük boşluk görülmektedir. Bu çalışma, sosyal medya kullanıcıları İTS araştırmalarında boşluğu doldurmaya katkı sağlayacak Sosyal Medya Kullanıcıları İçin İkincil Travmatik Stres Ölçeğinin (SM-İTSÖ) Türkçe'ye uyarlanmasını amaçlamaktadır. Çalışmada 18-26 yaş arası 708 katılımcının verileri analiz edilmiştir. SM-İTSÖ'nin geçerlilik ve güvenirlik çalışması gerçekleştirilmiş olup üç faktörlü yapısı incelenmiştir. SM-İTSÖ Türkçe uyarlama bulgularına göre orijinalinde olduğu gibi üç faktörlü bir yapı yerine tek faktörlü bir yapıdan oluşmaktadır. AFA sonuçları, ölçek maddelerinin tek faktörlü bu yapı altında toplanabileceğine işaret etmektedir. Geçerlik ve güvenirlik çalışmaları sonuçlarına göre SM-İTSÖ'nün Türkçe versiyonunun bilimsel çalışmalarda uygulanabilir olduğu ifade edilebilir.

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Ethical Statement: The study was carried out within the framework of the Helsinki Declaration and all participants whose informed consents were obtained took part in this study as volunteers. The ethics committee of Ondokuz Mayıs University was consulted for ethical approval of this study.

INTRODUCTION

In recent years, the rapid advancement of internet use due to the development of technology has increased the number of social media users. The comprehensive data of the Global Web Index, published every year, tells us that there were 4.54 billion internet users around the world in January 2020. Considering the data on the same date, it is seen that there are 3.8 billion social media users around the world (Kemp, 2020). This may be an indication that social media use has begun to gain a place as steadfast as the need for the internet, which is an indispensable part of life. The data, with the number of social media users that constitute 81% of the country's population, aged 13 and over, indicates that Turkey also shows similar results.

Young adult social media users all over the world as well as in Turkey have an important place. It can be said that this is due to the high number of young adult users and their usage times (Kemp, 2020). According to TUIK (2019) data, 37.8% of social media users are at the high school level and 49.7% are at the university level. Taken from this angle, almost every levels expressing young adult individuals in Turkey show intensive use of social media. This situation highlights the young adulthood period.

Young adulthood emerges as a very challenging and confusing period developmentally. Young adults are attempting to stabilize harmony with their coevals while at the same time finding their independence. Loneliness, which brings along anger, sadness, alienation from individuals and emptiness, can also be seen in adolescents and young adulthood (Russell, Peplau & Cutrona, 1980). In fact, it is stated in the studies conducted that this condition is more common in adolescents and young adults rather than individuals in older ages (Jones & Carver, 1991). In another study conducted by Anderson & Jiang (2018), almost half of the young adults stated that social media has no effect on their lives, but it has a negative effect by 24%. This rate is a serious data in that it constitutes approximately one quarter of the sample. In the same study, social media on young adults; it is stated that it causes situations such as bullying, distorting behaviour and peer pressure.

Regardless of their age range, the significant increase in the number of users on social media apps day after day raises questions about attitudes, behaviours, and perceptions of all users in the process. In particular, social media and internet use not only provide convenience to individuals' lives, but also bring various problems with it (Bayzan, 2013). Researchers express that; a decrease in self-esteem, life satisfaction, and the emergence of psychological problems are some of the potential outcomes caused by spending an excessive amount of time on social media (Kross et al., 2013; Valkenburg, Peter & Schouten, 2006). Also; It can be listed as a risk to the lives of individuals, identity problems caused by spending too much time, and being affected by negative news and content (Zenelaj, 2014).

Considering all these, it can be said that social media show users traumatic situations in the most vivid way. Also, social media users may not have to experience the trauma of social media first-hand. Users may have the same symptoms as a cause of trauma that has been experienced indirectly (Mancini, 2019). To put it another way, social media users are subjected to experience the outcomes of secondary trauma. At this point, it would be appropriate to express the concept of Secondary Traumatic Stress (STS) with certain dimensions.

STS is a concept that includes the processes that constitute the source of trauma. With the publication of DSM-4, it has been officially accepted that individuals may suffer from indirect trauma (APA, 1994). STS appears to be the most similar mental health condition to PTSD among all other mental health

disorders, but it is not a diagnostic disorder independent of DSM-5 (APA, 2013). In DSM-5, there is a broad expression in that context in the description of Post Traumatic Stress Disorder (PTSD), including indirect trauma. Accordingly, when defining PTSD; There are also situations related to the individual witnessing traumatic situations that occur in others and learning that traumatic events occur in people around him (APA, 2013). STS has been expressed in many terms, including compassion fatigue, indirect traumatization, and burnout. Although there is a certain amount of overlap between these concepts, there are also various differences (Jenkins and Baird, 2002).

According to Figley (1995) STS is expressed as "the stress caused by the knowledge about the traumatizing event experienced by another person". In this context, STS can be expressed as a state of stress resulting from exposure to trauma stories. STS can have physical, emotional, cognitive and social effects on the general mental health of individuals who experience indirect trauma. It also has negative effects such as depression, insomnia, anxiety, substance and alcohol use (Pearlman & Saakvitne, 1995; Măirean, 2016; Joen & Ha, 2012).

The symptom similarities between PTSD and STS have led researchers to investigate the relationship pattern between mood states and STS (Măirean, 2016; Lockwood, Seara-Cardoso & Viding, 2014). In this context, when studies in recent years are examined, it is seen that psychic concepts such as empathy, separation, emotion separation, awareness, and emotion regulation have been investigated in order to better understand STS (Robins, Meltzer & Zelikovsky, 2009; Thomas & Otis, 2010). In addition, it is claimed that the particularly high level of empathy found in individuals exposed to the stories of individuals exposed to trauma leads the individual to the risk of STS (Figley, 1995; Saakvitne & Pearlman, 1996). Although empathy often has a critical position in helping individuals and understanding them, the level of empathy without sufficient emotional discrimination can lead individuals to the risk of STS (Decety & Lamm, 2006; Figley, 2002; Rothschild, 2006). It has been revealed at this point that sympathy is a two-edged sword and sympathetic response exposes individuals to more risk.

In studies on STS, close family members and mental health professionals are seen as the sample most affected by STS (Bell, Kulkarni & Dalton, 2003). One of the reasons for this may be that mental health experts were mostly chosen as samples in studies conducted on STS. However, the abundance of data on social media can expose any user to a lot of content related to trauma. Secondary trauma occurs when an individual is excessively exposed to other people's trauma in any environment (Kahil & Palabıyıkoğlu, 2018). From this point of view, in today's world where social networks have become a part of daily life, the frequency of encountering traumatic narratives has increased significantly and this brings the STS factor to the fore. In addition, sharing of digital trauma stories can create an intense transfer of emotions for users who are exposed to it. Therefore, secondary trauma should be seen as an important problem for healthcare professionals or mental health professionals as well as for social media users.

There is a huge gap in the literature regarding STS processes for social media users. On the other hand, the increasing number observed on social media users reveals the importance of secondary traumatic stress processes they are experiencing. However, to be stated in general, the numerous researches on the psychological conditions concerning social media users are quite insufficient. This study will contribute to examining the psychological conditions of social media users in terms of STS. It will also pave the way for an increase in STS-related studies in social media populations. Thus, the social media dimension will also come to mind in the studies to be carried out on STS. It will also play an important role in

determining the STS status of social media users in the relevant culture. In addition, it will contribute to filling the gap in the literature on STS studies.

METHOD

Research Model

This study, in which the Secondary Traumatic Stress Scale for Social Media Users developed by Mancini (2019) was adapted to Turkish, is a quantitative study. In this study, sample selection procedures were completed by using the cross-sectional research model. In this context, individuals aged 18-26 who accepted to participate in the survey were randomly included in the sample.

Study Group

Due to the Covid-19 pandemic that occurred around the world at the time of the study, data were collected from participants through forms created in electronic environment. Participants participated in the study by filling out the form, which took about 5 minutes. Demographic measurements are included in the forms alongside STS, social media use, depression and trauma history. Social media users considered in the young adult age range participated in the study. Among the participants that filled out these forms, individuals that are not aged between 18 and 26 were excluded from the analysis process, and the data of 708 participants were included in the analysis process.

Ethical Statement

The authors declare that they continue to work in accordance with scientific study ethics and the Helenski declaration in this study. Accordingly, the research was reviewed by the Social and Humanities Ethics Committee of Ondokuz Mayıs University and was given permission (REF: 2020/369-5-18433). In addition, the participants participated in the study on a voluntary basis.

Data Collection Tools

Secondary Traumatic Stress Scale for Social Media Users. Developed by Mancini (2019) in 2019, STSS-SM, is an item tool of 17, which was designed to mark the symptoms of attack, avoidance, and arousal linked with indirect exposure to traumatic experiences through the usage of social media. The STSS-SM scale consists of 17 items. Mancini carried out reliability and validity on 144 young assistants in the scale development study. According to the results of the study, the scale consists of 3 sub-dimensions. These are Attack, Avoidance, and Arousal. Unauthorized variables are indicated by 2, 3, 6, 10, and 13; Arousal is represented by observed variables 4, 8, 11, 15 and 16, while variables with observed avoidance are represented by 1, 5, 7, 9, 12, 14 and 17. Intrusion subscale consists of 5 items. Factor loads for this sub-dimension are .36, .50, .36, .43, .55. Avoidance sub-dimension consists of 7 items. The loads of this sub-dimension are .59, .79, 1.04, .88, .65, 1.13, .65. The arousal sub-dimension consists of 5 items. The loads of this sub-dimension are .96, .67, .59, .70, .69. For general STSS; the mean is 39.90, the standard deviation is 12.83, the alpha level is .92. For unauthorized entry; the average was 11.05, the standard deviation was 4.43, and the alpha level was .80. For arousal; the average was 12.31, the standard deviation was 4.22, and the alpha level was .79.

CES Depression Scale (Turkish Version). Developed by Lenore Radloff in 1977, CES-D measures a person's present degree of depressive symptomatic and frequency of the symptom in the past week, with responses scoring from zero to three (0 = Never [less than 1 day]; 5 = most of all time [5 -7 days]). There

are 20 items on the scale that assess depressive mood, feelings of helplessness with the feeling of hopelessness, guilt and worthlessness, psychomotor retardation, anorexia, and sleep disorder (Radloff, 1977). The CES Depression Scale can be scored between 0 and 60. In this context, high scores obtained from the scale indicate that the level of depression in individuals is high (Radloff, 1977). A cut-off score of 16 or higher to help identify people in danger of clinical depression was recommended by Radloff (1997). Radloff (1977) stated that the correlation between items in the scale is high. Also, the alpha coefficient of the general population sample was expressed as .85 while the coefficient alpha value of the patient sample is expressed as .90. In this context, it can be said that the scale has high consistency internally. Test-retest, which is another reliability test, shows moderate correlations varying from .51 to .67 (Radloff, 1977). In general, CES-D is a legitimate, reliable, and observable scale (Radloff, 1977). In the study carried out during the translation into Turkish, it was found to be .84. In addition, Cronbach Alpha internal consistency reliability of .88 was expressed in the test-retest study. A relationship of .69 was found between the two steps. Finally, in the criterion-related validity application, it was stated that there is a correlation coefficient of .77 between the CES Depression Scale and the Beck Depression Scale (Tatar & Saltukoğlu, 2010). The Cronbach alpha value for this study is .87.

Demographic Information Form. Apart from the scales explained above, an 11-item questionnaire about demographic data, social media use, and trauma was asked to be filled out by the participants. Participants were asked questions such as their gender, age, education level, household income, and time spent on social media daily. When the previous trauma, which was a yes or no question of "Have you ever experienced something extremely horrible, dangerous, or violent, where someone was severely injured or killed or might have gotten killed?" was confirmed, participants were told to state how their experience affected their competency to talk with others or sleep others using a 5-point self-attached rating scale (1 = it didn't affect you at all, 5 = it affected you very much).

Process

Firstly, permission for adaptation was obtained from the researcher Mancini (2019), who developed the scale. During the adaptation process of the scale to Turkish, the original scale was first translated into Turkish by 3 English-speaking translators. Afterwards, the Turkish translation of the scale was finalized and given to 3 different English-speaking field translators for back translation. The back translation was finalized and compared with the Turkish form. The translation process was completed by taking the expert opinion of the PCG (Psychological Counselling and Guidance) field expert who speaks English. Due to the Covid-19 pandemic, participants answered the questionnaire questions electronically created via Google Form.

Data Analysis

This study aims to adapt the Secondary Traumatic Stress Scale for Social Media Users to Turkish. Exploratory factor analysis (EFA), confirmatory factor analysis (CFA), Cronbach Alpha reliability analysis, and agreement validity analysis were applied in order to adapt the scale to Turkish. Questionnaire results are divided into half for EFA and CFA; In the first data set, the factor structure obtained by EFA was obtained and the validity of the factor structure was tested through the second data set. All of the applications were carried out via R Project software (R Core Team, 2020). Taking part in the R program in the analysis process psych (Revelle, 2018) and lavaan (Rosseel, 2012) packages were used.

RESULTS

Table 1. Descriptive statistics and frequency analysis results

	N	%
Age	22.70 ± 5.18	
Gender		
Male	297	41.90
Female	411	58.10
Education level		
Primary school	3	0.40
Secondary School	2	0.30
High School	109	15.40
Associate degree	109	15.40
Undergraduate	443	62.60
Master's degree	37	5.20
PhD degree	5	0.70
Your household monthly income		
0 - 2000 TL	163	23.00
2001- 4000 TL	277	39.10
4001 and more	268	37.90
How much time do you spend on social media per day?		
Less than 1 hour	61	8.60
Between 2-3 hours	334	47.20
Between 4-5 hours	205	29
Between 6-7 hours	63	8.90
More than 8 hours	45	6.40

Descriptive statistics and frequency analysis results of the variables used in the study are given in Table 1. According to these results, 41.9% of the individuals participating in the study are men and 58.1% are women. The average age of these individuals is 22.7. Of the individuals participating in the study, .4% graduated from primary school, 0.3% from secondary school, 15.4% from high school while 15.4% have an associate degree, 62.6% a bachelor's degree, 5.2% a master's degree, and .7% a doctorate. The monthly household income of 23% of the individuals is between 0-2000 TL, 39.1% have a monthly income between 2001-4000 TL and 37.9% have a monthly income more than 4001 TL. In addition, 8.6% of the individuals participating in the study spent less than 1 hour on social media, 47.2% between 2-3 hours, 29% between 4-5 hours, 8.9% between 6-7 hours and 6.4% stated that they spend more than 8 hours.

In the first stage, sub-dimensions were evaluated through EFA to examine the factor structure of the current scale. Varimax was used in the rotation process for EFA and the Principal Components method was used in the estimation process. In the EFA stage, since the scale items have a sorting level of measurement, dimension reduction operations were performed via the Polychoric correlation matrix instead of the classical Pearson correlation matrix (Holgado-Tello et al., 2010).

According to Bartlett's Test of Sphericity, which is a prerequisite for EFA, a significant correlation was found between the items ($\chi^2=5598.924, p<0.001$). For the sampling adequacy criterion, the Kaiser-Meier-Olkin value was calculated as .920 and since this value was above .9, it was determined that the current sample was highly sufficient. A single eigenvalue greater than 1 was found according to the eigenvalues calculated over the polychoric correlation matrix. According to Kaiser rule, STSS-SM consists of a single factor structure instead of a three-factor structure as in the original, according to the findings

in adaptation to Turkish. The variance explanation ratio of the single factor structure was calculated as 63.9%.

Table 2. EFA results of STSS-SM articles

Item	F1	Community
s8	0.866	0.749
s15	0.848	0.719
s11	0.843	0.711
s13	0.840	0.705
s9	0.838	0.703
s10	0.831	0.690
s4	0.820	0.673
s7	0.817	0.668
s5	0.813	0.662
s17	0.805	0.647
s12	0.804	0.646
s16	0.797	0.636
s6	0.788	0.621
s3	0.777	0.603
s2	0.754	0.568
s1	0.688	0.473
s14	0.633	0.400

Factor loads and community values obtained as a result of EFA of STSS-SM are given in Table 2. According to these results, all factor loads are above .50 and community values are higher than .30. EFA results indicate that scale items can be collected under this single factor structure.

Table 3. Reliability of STSS-SM items

Item	Adjusted item-total correlation	Cronbach Alpha value when the item is deleted
s1	0.607	0.949
s2	0.675	0.947
s3	0.689	0.947
s4	0.728	0.946
s5	0.730	0.946
s6	0.710	0.947
s7	0.712	0.947
s8	0.790	0.945
s9	0.759	0.946
s10	0.753	0.946
s11	0.766	0.946
s12	0.710	0.947
s13	0.715	0.947
s14	0.536	0.951
s15	0.764	0.946
s16	0.702	0.947
s17	0.711	0.947

Table 3 shows the results of the Cronbach Alpha reliability analysis applied to evaluate the internal consistency of STSS-SM. The overall reliability score of the scale was calculated as .950. The corrected total item correlations for all items are positive, and the reliability score does not increase significantly when the item is removed. As a result of the reliability analysis, it is concluded that the scale is very reliable in the adaptation to Turkish study.

CFA was applied to test the validity of the single factor structure obtained from STSS-SM for the adaptation to Turkish study. In the CFA stage, the diagonally weighted least squares technique (DWLS) was applied for the estimation method because the data were at the sequential measurement level (Rosseel, 2012).

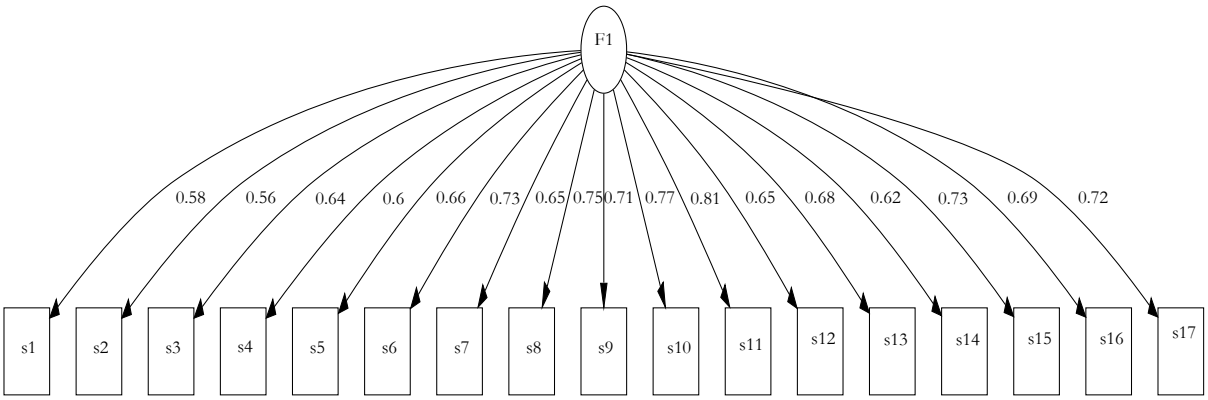

Figure 1. STSS-SM CFA results

Figure 1 shows the CFA results of STSS-SM. According to the graphical structure obtained as a result of CFA, the standardized load values of all items are above .40.

Table 4. Fit index of CFA findings of STSS-SM result

χ^2	sd	GFI	AGFI	TLI	CFI	SRMR	RMSEA
126.037	119	0.991	0.989	0.999	0.999	0.069	0.012

Table 4 shows the goodness of fit values obtained as a result of CFA of STSS-SM. According to these values, $\chi^2/sd = 1.059$ value is less than 2 and the RMSEA value is less than .05. In addition, the SRMR value is below .08 and GFI, TLI, CFI, AGFI values are above .975. Generally speaking, validity results of the adaptation to Turkish study of STSS-SM point to perfect fit (Mulaik et al., 1989).

Table 5. STSS-SM and CES-D concordance validity results

	STSS-SM-Score	CES-D-Score
TSS-Score	1	0.698
CES-D-Score	0.698	1

In Table 5, the result of Pearson correlation analysis between STSS-SM scores and CES-D scores applied for concordance validity is shown. According to the result of the correlation analysis, there is a significant positive correlation between the STSS-SM adapted to Turkish and the CES-D scale ($p < 0.05$). It can be said that this scale, which was adapted due to its positive and significant correlation coefficient, provided concordance validity.

DISCUSSION, CONCLUSION & SUGGESTIONS

When the literature is reviewed, there is no study examining the STS processes of social media users. The literature on trauma reveals a link by connecting PTSD with STS. The acquisition of STS, generally speaking, is established on the theoretical grounds of PTSD. STS symptoms can be theorized similarly to PTSD with three factors, as the researches argue. These factors are; attack, avoidance and arousal (Figley, 1995). Although Mancini (2019) revealed that the STSS-SM she developed could be grouped sufficiently in terms of three factors, she stated that there were significant overlaps between these variables. According to the findings of the adaptation of STSS-SM to Turkish, it consists of a one-factor

structure instead of a three-factor structure as in the original. The variance explanation ratio of the single factor structure was calculated as 63.9%. According to the results of the factor loads and community values obtained as a result of EFA of STSS-SM, all factor loads are above .50 and community values are higher than .30. EFA results indicate that scale items can be collected under this single factor structure.

Factor loadings in the original scale; It was found to be between .36 and .55 for intrusion, between .59 and 1.13 for avoidance, and between .59 and .96 for arousal (Mancini, 2019). In this study, the lowest factor load in a single factor structure was found to be .56. It is thought that the perfect result of the single factor structure may be due to the cultural difference. Adapting the original scale to different cultures will be important in understanding this situation. In addition, it can be said that intrusion, avoidance and arousal sub-factors are interrelated in terms of STS (Figley, 2002). In this context, it can be thought that the items in the related three-factor structure reflect each other. There is also a sampling difference between development and adaptation. This study, carried out with 708 young adult, may have yielded more meaningful results in testing factors. The sample used in this study is approximately 5 times the scale used in the scale development study (Mancini, 2019). In this context, the application of the scale in larger samples in the future will answer the questions about the sub-factor.

As the conclusions of this analysis show, STSS-SM is an STS criterion based on a single factor model in social media users. In this context, it was observed that STSS-SM was consistent and STS was associated period spent on social media, depression symptoms, previous trauma encounters, and symptoms derived from being affected by trauma.

The time consumed on social media is not related to the significance of STS experienced by the individual ($r = .15$, $p = .07$) as the study conducted by Mancini (2019) reveals. Similar results were found in this study. Also, the sampling in this study is sufficient. At the same time, the study has an extremely homogeneous distribution. 708 individuals participated in the study and 41.9% of the individuals participating in the study were male and 58.1% were female. To provide more robust findings future researches should be carried with more extensive sample size and using quota sampling to obtain a more generalizable sample.

Investigating the underlying characteristics of STS in the users of social media is a valuable aim for the next researches. It is known that young adults are indirectly traumatized by using social media while it is unknown how the detected variables of STSS-SM interact. Studies to be carried out at this point will help determine ways to reduce STS among social media users.

Other than the existing sample under investigation, it is recommended strongly that the outcomes of this study be generalized to individuals. Different groups like people who regularly watch or read the news to give an example, or people traumatized after watching a television show or film can acquire distinct consequences. To continue to be added to the STS literature and to define the contrast between STS and PTSD, future researches should be carried to examine STS with the use of new examples or a more generalizable measure.

STSS-SM can be used in studies to be carried out regarding STS processes of social media users. Future researches exploring different determinants in relation to STS in social media users could assist expand data on the impact of social media on the mental well-being of young adults and possibly improve the outcomes of indirect trauma.

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Author Contributions

This study was conducted by all the authors working together and cooperatively. All of the authors substantially contributed to this work in each step of the study.

Conflict of Interest

It has been reported by the authors that there is no conflict of interest.

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Ethical Statement

This study was completed in accordance with the Helsinki Declaration. In line with this, the study was permitted by Ondokuz Mayıs University, Social and Human Sciences Ethics Committee.
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