Bartin University Journal of Faculty of Education
https://doi.org/10.14686/buefad.1808798

BARÜ

Research Article

Secondary Traumatic Stress and Music Activity Preferences After The 2023 Kahramanmaraş Earthquake

2023 Kahramanmaraş Depremi Sonrası İkincil Travmatik Stres ve Müzik Aktivitesi Tercihleri

Ceren Doğan*, & Muhammed Enes Keskinkılıç**

* Bartın University, Department of Fine Arts Education, Bartın, Türkiye. E-mail: cdogan@bartin.edu.tr
Bartın Üniversitesi, Güzel Sanatlar Eğitimi Bölümü, Bartın, Türkiye. E-posta: cdogan@bartin.edu.tr
** Bartın University, Department of Educational Sciences, Bartın, Türkiye. E-mail:ekeskinkilic@bartin.edu.tr (Corresponding author)
Bartın Üniversitesi, Eğitim Bilimleri Bölümü, Bartın, Türkiye. E-posta: ekeskinkilic@bartin.edu.tr

Citation: Doğan, C., & Keskinkılıç, M.E. (2026). Secondary traumatic stress and music activity preferences after the 2023 Kahramanmaraş earthquake. *Bartin University Journal of Faculty of Education, 2026*(3), 1241-1254. https://doi.org/10.14686/buefad.1808798

Article Information

Article History

Received:
22 October 2025
Accepted:
22 May 2026
Published:
25 June 2026

Keywords

Secondary traumatic stress
Music preferences
Earthquake
University students
Social media

Abstract

Purpose: *This study aims to examine the relationship between secondary traumatic stress (STS) related to social media content about the 2023 Kahramanmaraş Earthquake and the music activity preferences (e.g., listening, playing, singing) of education faculty students. Modifying music consumption is explored as a potential emotion regulation strategy associated with coping with vicarious trauma.* ***Method:*** *A quantitative correlational screening model was employed. The study group consisted of 278 undergraduate education faculty students in Türkiye. Data were collected during the 2022-2023 Spring Semester using the Secondary Traumatic Stress Scale for Social Media Users and a researcher-developed Music Activities Preference Form. Data were analyzed using independent samples t-tests and Chi-square tests.* ***Findings:*** *Students who changed their music preferences post-earthquake exhibited significantly higher STS scores compared to those who did not ($p<0.001$, Cohen's $d=0.49$). Significant associations were found between pre- and post-earthquake music genres ($p<0.001$, Cramer's $V=0.60$) , as well as the emotional characteristics of the melodic ($p<0.001$, Cramer's $V=0.40$) and lyrical structures ($p<0.001$, Cramer's $V=0.41$). Notably, participants shifted from preferring sad emotional characteristics to joyful ones post-earthquake.* ***Conclusion:*** *The study successfully established a significant relationship between social media-induced STS and changes in music preferences. These behavioral shifts may reflect an active coping mechanism for emotional self-regulation. Recognizing such changes could provide university counseling centers and educators with potential indicators to better support student well-being following collective traumas.*

CC BY NC

Makale Bilgisi

Makale Tarihçesi

Geliş Tarihi:
22 Ekim 2025
Kabul Tarihi:
22 Mayıs 2026
Yayımlanma Tarihi:
25 Haziran 2026

Anahtar Kelimeler

İkincil travmatik stress
Müzik tercihleri
Deprem
Üniversite öğrencileri
Sosyal medya

Öz

Amaç: *Bu araştırmanın amacı, 6 Şubat 2023 tarihli Kahramanmaraş Depremi ile ilgili sosyal medya içeriklerinin eğitim fakültesi öğrencilerinde yarattığı ikincil travmatik stres (İTS) ile müzik etkinliği tercihleri (dinleme, çalma, söyleme vb.) arasındaki ilişkiyi incelemektir. Müzik tüketimindeki değişim, dolaylı travmayla başa çıkma ile ilişkili potansiyel bir duygu düzenleme stratejisi olarak incelenmiştir.* ***Yöntem:*** *Çalışmada nicel araştırma yöntemlerinden ilişkisel tarama modeli kullanılmıştır. Çalışma grubu, Türkiye'deki eğitim fakültelerinde öğrenim gören 278 lisans öğrencisinden oluşmaktadır. Veriler 2022-2023 Bahar Döneminde, Sosyal Medya Kullanıcıları için İkincil Travmatik Stres Ölçeği ve araştırmacılar tarafından geliştirilen Müzik Etkinlikleri Tercih Formu ile toplanmıştır. Elde edilen verilerin analizi için bağımsız örneklemler t-testi ve Ki-kare testleri yapılmıştır.* ***Bulgular:*** *Deprem sonrasında müzik tercihlerini değiştiren katılımcıların İTS puanları, değiştirmeyenlere kıyasla anlamlı düzeyde yüksek bulunmuştur ($p<0.001$, Cohen's $d=0.49$). Deprem öncesi ve sonrası müzik türleri ($p<0.001$, Cramer's $V=0.60$) ile müziklerin ezgisel ($p<0.001$, Cramer's $V=0.40$) ve sözel yapılarının ($p<0.001$, Cramer's $V=0.41$) duygusal özellikleri arasında anlamlı ilişkiler saptanmıştır. Öğrencilerin deprem sonrasında hüzünlü duygusal özelliklerden neşeli özelliklere doğru bir yönelim gösterdiği dikkat çekmektedir.* ***Sonuç:*** *Araştırma, sosyal medya kaynaklı İTS ile müzik tercihlerindeki değişimler arasında anlamlı bir ilişki olduğunu başarıyla ortaya koymuştur. Bu davranışsal değişimler, duygusal öz-düzenleme için aktif bir başa çıkma mekanizmasını yansıtıyor olabilir. Bu tür değişimlerin fark edilmesi, üniversite psikolojik danışmanlık merkezlerine ve eğitimcilere, toplumsal travmalar sonrasında öğrencilerin iyi oluşlarını desteklemede değerli bir gösterge sunabilir.*

Introduction

Art is a significant activity that holds societies together and has the power to represent that society (Bozkurt, 2015). Music, the art form in which feelings and thoughts are expressed through sounds, is accepted as the fastest-spreading art form (Turhal, 2019). Individuals use music consciously or unconsciously to create, change, maintain, or develop their feelings and mental states (Öztürk, 2022). It is known that the music we listen to generally affects and regulates emotions (Bozkurt et al., 2015). Music is an essential tool that effectively reduces heart rate, blood pressure, body temperature, and respiratory rate; it provides relaxation, changes the perception of pain, and diverts attention. Music can create deep relaxation. It is also known to have effects that alleviate insomnia (Karamızrak, 2014; Covington, 2001). Music can shape how an individual emotionally experiences and interprets a moment or event (Landis-Shack et al., 2017). Music can increase emotion regulation, increasing well-being (Chin & Rickard, 2014; MacDonald et al., 2012). Grounded in established psychological frameworks, such as Lazarus and Folkman's (1984) transactional model of stress and coping, music listening can be conceptualized as a primary emotion-focused coping strategy. When faced with uncontrollable external stressors -such as an influx of traumatic news via social media-

individuals actively seek ways to manage their internal emotional responses. Furthermore, viewed through the lens of Gross's (1998) process model of emotion regulation, selecting specific music genres acts as "situation modification" and "attentional deployment". By actively changing their auditory environment, individuals can deliberately shift their attention away from trauma-inducing stimuli and modulate their physiological arousal. Individuals may listen to different music genres to regulate different aspects of their emotions.

Music genres can differ in tempo, time signature, rhythmic or melodic complexity, and tonality. Understanding which aspects of a musical genre characterize certain emotions is essential in explaining why individuals may use different emotion regulation strategies for different music genres. Numerous organizations and individuals use music to regulate or change the emotional states of others. Music can be used to regulate the emotions of users of that environment, such as playing fast music in restaurants and stores to speed up customers or even playing calm music to relax patients and passengers in hospitals or airports (Cook et al., 2019).

Listening to music before and after trauma has often been studied as a therapeutic tool (Beck et al., 2018; Beck et al., 2021). It seems appropriate to consider pre-traumatic music experience as a factor that prevents or limits the development of Post-Traumatic Stress Disorder (Fraile et al., 2023). In Moore's (2013) systematic review of the neurological effects of music on emotional processes, it was shown that listening to music can deactivate the amygdala, reducing the intensity of stress-related emotional states and psychophysiological arousal. It has been found to induce pleasure and happiness (Witte et al., 2020). In addition, as a physiological regulation tool, improved sleep, relaxation, and a reduction in PTSD symptoms have been found as a result of listening to music. Listening to music can improve physiological distress symptoms in people with negative experiences. These may have a temporary effect, rather than leading to brain improvement as popularly claimed, but may still be appreciated by those who benefit from more sleep and relaxation (McFerran et al., 2020).

Considering the effects of music on human psychology, determining the musical factors that may affect the psychological state of prospective teachers and guiding them with the right approaches during the teacher training process can help them become psychologically healthier individuals (Burak et al., 2018). However, secondary trauma has not been sufficiently researched in prospective teachers, and studies are needed to deepen our understanding of what helps teachers remain resilient in the face of trauma (Miller & Flintstipp, 2019).

Secondary traumatic stress is the stress response occurring when an individual is exposed to the traumatic experiences of others (Figley, 1995). Research has shown that excessive social media use can lead to psychological problems (Kross et al., 2013; Valkenburg et al., 2006). Based on this, it is possible to say that social media can lead to secondary traumatic stress. However, when the literature is reviewed, it is seen that the

number of studies on secondary traumatic stress is low. While the therapeutic application of music post-trauma is documented, less is known about how individuals actively alter their personal music listening preferences to self-regulate in response to secondary traumatic stress. This study addresses this gap by conceptualizing music preference not just as a passive habit, but as an active coping mechanism (e.g., Saarikallio, 2011) employed by students facing STS, aligning with existing frameworks of music as an emotion regulation strategy (ERS). According to Saarikallio's framework of music-related emotional self-regulation, individuals use music for distinct regulatory goals, such as diversion (distracting oneself from distressing thoughts), discharge (releasing negative emotions), or solace (seeking comfort and validation). In the context of secondary traumatic stress, a shift in music preference is not a random occurrence but a goal-directed behavior. Actively transitioning toward specific melodic or lyrical structures—such as moving from sad to joyful music—demonstrates a deliberate self-regulatory effort to up-regulate positive affect, buffer against vicarious trauma, and restore psychological homeostasis. Considering this information, answers are sought to the following questions within the scope of the study:

- Do the music activity preferences of education faculty students differ according to their gender?
- Do the music activity preferences of education faculty students differ according to their musical education status?
- Do the secondary traumatic stress levels of students whose musical activity preferences changed after the earthquake differ significantly compared to students whose musical activity preferences did not change?
- Do the music activity preferences of education faculty students differ according to the pre-earthquake and post-earthquake periods?

Methodology

Research Design

This study aims to determine association between secondary traumatic stress created by social media content related to the Kahramanmaraş Earthquake and education faculty students' musical activity preferences (music listening, playing collectively or individually, singing). For this purpose, correlational research, one of the quantitative research methods, was used. Correlational research is used to investigate the relationship between two or more variables (Büyüköztürk, 2020).

Study Group

The study group consisted of 278 undergraduate students studying in the spring semester of the 2022-2023 academic year at the Faculties of Education. To specifically isolate secondary traumatic stress and prevent confounding effects from primary trauma exposure, the study targeted students residing outside the earthquake zone. Data were

primarily collected from students enrolled at universities located outside the disaster area (e.g., Ankara and Bartın). Furthermore, the recruitment announcements explicitly defined the inclusion criterion, stating that the survey was intended only for individuals who were not directly affected by the earthquake. The convenience sampling method was utilized to determine the study group. Convenience sampling is the researcher's preference to collect data from a sample that can be easily accessed (Büyüköztürk, 2020). Data were collected online via Google Forms, including the Secondary Traumatic Stress Scale for Social Media Users and the Music Activities Preference Form. Sample online music links were included in the online form for music genre preferences. Providing these samples aimed to ensure that participants without formal music education could recognize the genres and report their preferences accurately, rather than relying on genre labels alone. Descriptive information about the study group is presented in Table 1.

Table 1. *Descriptive Characteristics of Study Group*

Groups	N	%
Female	208	74.3
Male	70	25
Freshmen	69	24.6
Sophomores	91	32.5
Juniors	66	23.6
Seniors	54	19.3
Low socioeconomic status	46	16.4
Medium socioeconomic status	228	81.4
High socioeconomic status	6	2.1
Science Teaching	43	15.4
Psychological Counselling and Guidance	40	14.3
Primary School Teaching	33	11.8
Social Sciences Teaching	32	11.4
Art Teaching	31	11.1
Music Teaching	30	10.7
Preschool Teaching	30	10.7
English Teaching	20	7.1
Primary School Mathematics Teaching	11	3.9
Language Teaching	4	1.4
Special Education Teaching	3	1
Language and Literature Teaching	2	0.7
Physics Teaching	1	0.4

Data Collection

Secondary Traumatic Stress Scale for Social Media Users (STSS-SM): STSS-SM, developed by Mancini in 2019 and adapted to native culture by Balcı Çelik and Altınışık in 2021, was analyzed in the validity-reliability study of data from 708 participants aged 18-26. According to the findings of the adaptation, it was indicated that it could be collected under a single-factor structure. According to Cronbach Alpha reliability analysis to evaluate the internal consistency of STSS-SM, the reliability score was found to be .950 (Balcı Çelik & Altınışık, 2021).

Music Activities Preference Form of Education Faculty Students: Researchers developed the form to determine whether the emotional impact created by the lyrical and melodic structure of the musical activities preferred by the participants differed before and after the earthquake. Seven basic emotions (fear, sadness, anger, disgust, contempt, joy, surprise) were used to express the emotional characteristics of the participants' musical activity preferences (Ekman, 1992). To enhance the validity of the researcher-developed 'Music Activities Preference Form', the instrument items and categorization (e.g., music genres, emotional aspects based on Ekman) were subjected to content validity assessment by a panel of subject-matter experts (e.g., Lynn, 1986). The form consisted of categorical items assessing demographic information (e.g., music education status) and pre- and post-earthquake music habits. Sample items include: 'Which music genre do you most prefer in your musical activities (listening, playing, singing, choir, group playing, etc.)?', 'With which emotion would you best describe the melodic structure of your musical activities?', and 'Did your musical activity preferences change after the earthquake?'. Because the form collects categorical data regarding subjective preferences rather than measuring a continuous psychological construct, standard internal consistency metrics (e.g., Cronbach's Alpha) were not applicable. Instead, the reliability and clarity of the items were established through rigorous review by the expert panel and informal feedback from a small group of undergraduate students. This ensured face validity and that the terminology regarding musical genres and emotional categories was universally understood prior to actual data collection.

Data Analysis

To answer the research questions, two independent sample t-tests and chi-square tests were conducted. The analyses were performed using the SPSS 22.0 package program. Two independent sample t-tests compare the means of two different independent sample groups. The chi-square test tests whether the difference between expected and observed frequencies is significant (Ersöz & Ersöz, 2019).

Research Ethics

The study was conducted with the permission of the Social and Human Sciences Ethics Committee of the university which the authors are affiliated. Participants were informed, and their consent was obtained before participating in the study.

Findings

The first measurement of the music genre listened to according to gender differs significantly (χ2:19,82; sd: 6; $p<0,05$; Cramer's V = 0.27). The findings are presented in Table 2.

Table 2. *Cross Frequency Table by Gender and Music Genre*

		Easy Listening	Pop	Folk	Rock	Hip Hop	Classical	Other	Total
Gender	Female	28	82	28	25	8	17	20	208
	Male	2	15	16	13	7	7	10	70
Total		30	97	44	38	15	24	30	278

As seen in Table 3, the first measurement of the music genre listened to differs significantly according to whether or not the participants have art education (χ2:14.79; sd: 6; p<0.05; Cramer's V = 0.23). It is seen that women mostly prefer to listen to pop music, while men mostly prefer to listen to folk music and pop music. The least preferred music genre for women is hip-hop; for men, hip-hop and classical music are the least preferred genres.

Table 3. *Cross Frequency Table of Music Genres and Whether the Participants Have Art Education*

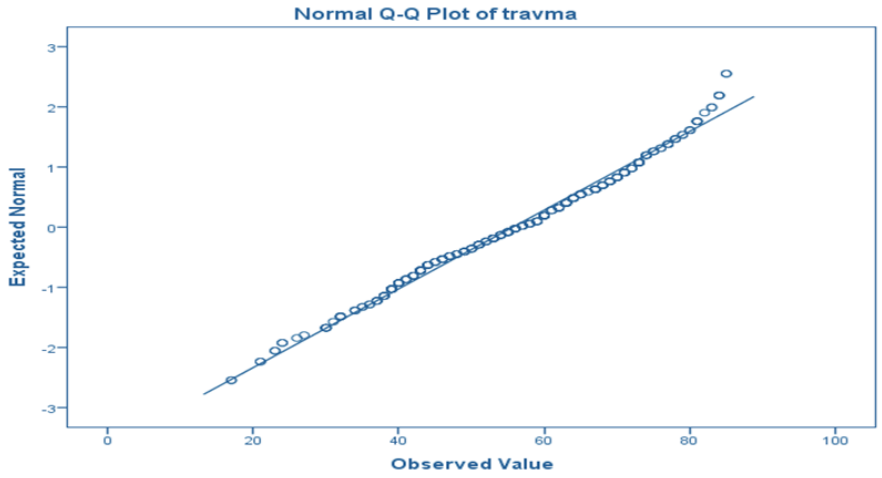
		Easy Listening	Pop	Folk	Rock	Hip Hop	Classical	Other	Total
Art Education	Yes	3	14	13	14	2	8	6	60
	No	27	83	31	24	13	16	24	218
Total		30	97	44	38	15	24	30	278

As seen in Table 4 and Figure 1, when the secondary traumatic stress scores of education faculty students due to social media use are examined, that the scores are normally distributed.

Table 4. *Descriptive Statistics on Secondary Traumatic Stress Scores Due to Social Media Use*

Mean	Std. Deviation	Minimum	Maximum	Skewness	Kurtosis
55.71	15.26	17	85	-0.19	-0.64

Figure 1. *Q-Q Plot of Secondary Traumatic Stress Scores Based on Social Media Use*



The secondary traumatic stress scores of participants who changed their preference for music after the earthquake were significantly higher than those who did not change their preference for music after the earthquake (t: 3.74; df: 276; p<0.001, Cohen's d = 0.49). The findings are given in Table 5.

Table 5. *Comparison of Secondary Traumatic Stress Scores Due to Social Media Use in terms of Change in Music Genre*

Change	N	Mean	Std. Deviation	t	Sd	p	Cohen's d
Yes	81	60.93	12.98	3.74	276	<0.001	0.49
No	197	53.56	15.64				

Participants who changed their preference for music after the earthquake significantly differed in the music genre they listened to before and after the earthquake (χ2:175.99; sd: 36; p<0.001; Cramer's V = 0.60). Compared to before the earthquake, there was a decrease in easy listening and classical music after the earthquake, while there was an increase in pop, folk, rock and hip hop. While easy listening, pop, and classical music were the most listened to before the earthquake, pop, folk, rock, and easy listening were the most listened to after the earthquake. The findings are presented in Table 6.

Table 6. *Music Genre Pre-Post Test Cross Frequency Table*

		Pre-test							Total
		Easy Listening	Pop	Folk	Rock	Hip Hop	Classical	Other	
Post-test	Easy Listening	4	0	0	0	1	3	1	9
	Pop	8	20	0	1	0	2	1	32
	Folk	4	0	6	0	0	0	0	10
	Rock	2	0	1	6	0	0	0	9
	Hip Hop	0	0	1	0	2	1	0	4
	Classical	1	0	0	1	0	5	1	8
	Other	2	0	0	0	0	1	6	9
Total		21	20	8	8	3	12	9	81

As seen in Table 7 below, the melodic structure of the music listened to by participants who changed their preference for the music genre after the earthquake differed significantly from those listened to before and after the earthquake (χ2:38.48; sd: 9; p<0.001; Cramer's V = 0.40). While the individuals whose musical preferences changed after the earthquake listened to the most music whose melodic structure was sad before the earthquake, music whose melodic structure was joyful listened to the most after the earthquake.

Table 7. *Melodic Structure Pre-Post Test Cross Frequency Table*

		Pre-test				Total
		Joy	Sadness	Anger	Other	
Post-test	Joy	20	18	2	3	43
	Sadness	5	23	0	4	32
	Anger	0	1	2	0	3
	Other	0	2	0	1	3
Total		25	44	4	8	81

The lyrical structure of the music listened to by participants who changed their preference for the music genre listened to after the earthquake differed significantly before and after the earthquake (χ2:41.48; sd: 9; $p<0.001$; Cramer's V = 0.41). Participants whose musical preferences changed after the earthquake listened to more music with an emotional aspect of joy after the earthquake compared to before the earthquake. In comparison, they listened to less music with sad sounds. The findings are listed in Table 8.

Table 8. *Lyrical Structure Pre-test and Post-test Cross Frequency Table*

		Pre-test				Total
		Joy	Sadness	Anger	Other	
Post-test	Joy	15	12	2	3	32
	Sadness	4	31	0	2	37
	Anger	0	4	2	1	7
	Other	0	2	0	3	5
Total		19	49	4	9	81

Discussion

The study group of this correlational screening study, which aims to determine the association between secondary traumatic stress created by social media content related to the earthquake, and the music activity preferences of education faculty students, consists of 278 undergraduate students studying in the spring semester of the 2022-2023 academic year at the Education Faculty. The Music Activities Preference Form, developed by the researchers, and the STSS-SM, developed by Mancini in 2019 and adapted to native culture by Balcı Çelik and Altınışık in 2021, were used to collect the data.

According to the findings obtained as a result of the analysis, the first measurement of the music genre listened to differs significantly according to gender and whether the participants have art education or not. The secondary traumatic stress scores of the education faculty students due to social media use are normally distributed. The secondary traumatic stress scores of the participants who changed their preference for the music genre they listened to after the earthquake are significantly higher than the secondary traumatic stress scores of the individuals who did not change. For the

participants who changed their preference for the music genre, the music genres listened to before and after the earthquake and the emotional aspects of the lyrical and melodic structure of the music differed significantly.

Considering this information, before the earthquake, music with an emotional aspect of sadness was listened to more. In contrast, after the earthquake, music with an emotional aspect of joy was listened to more, along with changes in the music genre. Specifically, the observed increase in preferences for genres such as pop, folk, and rock post-earthquake might be attributed to their rhythmic stability and familiar melodic structures, which often provide a sense of predictability and comfort during times of collective uncertainty (Schäfer et al., 2013). Based on this correlational finding, the change in musical activity preferences among education faculty students appears to be associated with their secondary traumatic stress levels, suggesting a potential effort to regulate their emotional states.

Results of a study by Mas-Herrero (2022) also support the findings of this study. In the study considering which of the various leisure activities used to cope with the psychological burden of the COVID-19 pandemic were associated with positive outcomes in terms of mental health, survey data from approximately 1,000 participants from different countries showed that people chose music (listening, playing, singing) as the leisure activity that helped them the most. The data was considered significant in terms of pointing to effective strategies for coping with mental health problems beyond the problems related to the COVID-19 pandemic.

In this study, no distinction was made between individual or group music listeners or performers, and the focus was on the participants' musical activity preferences. According to Molnar-Szakacs and Overy (2006), musical experience involves the perception of purposeful, deliberate, and organized motor movement sequences resulting from temporally synchronized auditory information. Thus, according to the simulation mechanism implemented by the human mirror neuron system, a motor network similar to the one used during performance is also activated by someone listening to the music performance. This allows the musical experience resulting from the synchronization of similar neural mechanisms in the sender and receiver of the music to be represented by the performer and the listener.

For some, music can be an ‘escape’ from pain and a ‘reliever’ (Swart, 2013). According to Jung (1973), music expresses the movement of emotions and emotional values that cling to unconscious processes, reaching out to deep archetypal material and thus transforming the collective unconscious's motifs. Montello (2002) states that music bypasses cortical processing and directly enters the brain's emotional centers before being processed by the conscious mind. In this way, music can offer an alternative outlet for people to express themselves without requiring the expression of emotions. The studies above can also explain the changes in the participants' preferences for musical

genres when their secondary traumatic stress was high and the emotional changes evoked by melodic and lyrical structures in their musical activity preferences.

Conclusion and Recommendation

In conclusion, this study demonstrates a significant relationship between secondary traumatic stress induced by earthquake-related social media exposure and the musical activity preferences of education faculty students. The findings suggest that modifying music preferences—specifically the observed shift from sad to joyful emotional characteristics—may function as an active emotion regulation strategy. This shift indicates that students potentially utilize music as a coping mechanism to mitigate the psychological burden of vicarious trauma. Recognizing these behavioral shifts is crucial for educators and university counseling centers to identify and support vulnerable students during times of collective distress.

The findings suggest that a notable shift in music preference (e.g., from sad to joyful melodies) following a collective trauma may serve as a subtle behavioral indicator of heightened secondary traumatic stress. This aligns with calls for better support for prospective teachers facing trauma. University counseling centers and educators could be made aware of this relationship, potentially using music preferences as a non-invasive conversation starter to assess student well-being (cf. Baird & Jenkins, 2018).

This study has several limitations. A primary limitation is the reliance on a convenience sample, which limits the extent to which the findings can be generalized (Etikan et al., 2016). Additionally, the cross-sectional design cannot establish causality between STS and the change in music preference; it only identifies a significant correlation. Third, the methodology is susceptible to retrospective recall bias, as participants were asked to report their pre-earthquake music preferences after the traumatic event had already occurred (Raphael, 1987). Fourth, critical confounding variables that could directly impact the results—such as the daily duration of participants' social media use and their pre-existing psychological or psychiatric history—were not controlled for in the current model (Pourhoseingholi et al., 2012). Finally, although recruitment procedures explicitly targeted students outside the earthquake zone to isolate secondary trauma, the survey instrument did not include a specific demographic question confirming participants' exact geographical locations during the earthquake. Therefore, the unintended inclusion of a small number of individuals with primary trauma exposure cannot be definitively ruled out, which remains a methodological limitation.

Future research should address these limitations. A longitudinal design would provide deeper insight, tracking how STS and music preferences evolve over time (e.g., Bonanno, 2004). Future studies should also employ stratified sampling methods to enhance external validity. Finally, adopting a mixed-methods approach, including qualitative interviews, could explore the phenomenological experience of why students

chose specific genres (e.g., why folk and hip hop increased) and how they perceive this music's effect on their stress (Creswell & Plano Clark, 2017).

Ethical Approval

The study was conducted with the permission of the Social and Human Sciences Ethics Committee of Bartin University (2023-SBB-0195), to which the authors are affiliated. Participants were informed, and their consent was obtained before participating in the study. The purpose, scope, participation conditions, voluntariness, and the possibility of withdrawing from the research at any stage of the study were explained to the participants. It was stated that in the event of withdrawal from the study or disqualification by the researcher, the relevant data would not be used. However, that withdrawal from the study was not possible after the results were published. Assurance was given that the information obtained from the participants will be kept confidential and that the confidentiality of their identity information, if any, will be protected when the study is published.

Author Contributions

Ceren Doğan: Conceptualisation, Theoretical Background, Data Collection, Data Visualisation, Writing, Review and Editing, Funding Acquisition.

Muhammed Enes Keskinkılıç: Conceptualisation, Theoretical Background, Data Collection, Data Visualisation, Writing, Review and Editing, Funding Acquisition.

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Plagiarism Checks

The article was reviewed using the relevant tools and met the BUEFAD similarity standards.

Artificial Intelligence Usage Statement

The authors declare that no artificial intelligence tools were used in the preparation, writing, or analysis of this manuscript.

Referencing

Baird, K., & Jenkins, S. R. (2018). Vicarious resilience and vicarious trauma: A qualitative study of counselors-in-training. Counselling and Psychotherapy Research, 18(2), 192-200.

Balcı Çelik, S., & Altınışık, M.S., (2021). Adaptation of Secondary Traumatic Stress Scale to Turkish for Social Media Users: Reliability and validity study. Turkish Psychological Counseling and Guidance Journal, 11(60), 1-12.

Beck, B. D., Messel, C., Meyer, S. L., Cordtz, T. O., Søgaard, U., Simonsen E. & Moe, T. (2018) Feasibility of

trauma-focused Guided Imagery and Music with adult refugees diagnosed with PTSD: A pilot study, Nordic Journal of Music Therapy, 27(1), 67-86. https://doi.org/10.1080/08098131.2017.1286368

Beck, B. D., Meyer, S. L., Simonsen, E., Søgaard, U., Petersen, I., Arnfred, S. M. H., Tellier, V. & Moe, T. (2021) Music therapy was noninferior to verbal standard treatment of traumatized refugees in mental health care: Results from a randomized clinical trial, European Journal of Psychotraumatology, 12(1). https://doi.org/10.1080/20008198.2021.1930960

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events?. American Psychologist, 59(1), 20-28.

Bozkurt, S. (2015). Investigation of the kinds of music that middle school students listen to according to their emotional states: A mixed method study. Master's Thesis, Gaziosmanpaşa University Institute of Educational Sciences, Tokat, Turkey.

Bozkurt, S. S., Zahal, O. and Uyan, Z.D. (2015). Investigation of the kinds of music that middle school students listen to according to their emotional states. The Journal of Academic Social Science Studies, 39, 541-567. https://doi.org/10.9761/JASSS3119

Burak S., Atabek, O. & Orhon, G. (2018) "Relationships Between Musical Behaviors and Psychological States of Pre-service Teachers" 27th International Conference on Educational Sciences , vol.2018, Antalya, Turkey, pp.199-205.

Chin, T., & Rickard, N. S. (2014). Emotion regulation strategy mediates both positive and negative relationships between music uses and well-being. Psychology of Music, 42(5), 692–713. https://doi.org/10.1177/0305735613489916

Cook, T., Roy, A. R. K., & Welker, K. M. (2019). Music as an emotion regulation strategy: An examination of genres of music and their roles in emotion regulation. Psychology of Music, 47(1), 144-154. https://doi.org/10.1177/0305735617734627

Covington, H. (2001). Therapeutic music for patients with psychiatric disorders. Holistic nursing practice, 15(2), 59-69.

Creswell, J. W., & Plano Clark, V. L. (2017). Designing and conducting mixed methods research (3rd ed.). Sage publications.

Ekman, P. (1992). Are there basic emotions? Psychological Review, 99(3), 550–553. https://doi.org/10.1037/0033-295X.99.3.550

Ersöz, F., Ersöz, T. (2019). Spss İle İstatistiksel Veri Analizi İstatistik – Uygulama – Parametrik Ve Parametrik Olmayan Testler. Seçkin: Ankara.

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. American Journal of Theoretical and Applied Statistics, 5(1), 1-4.

Figley, C. R. (Ed.). (1995). Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized. Brunner/Mazel.

Fraile E, Gagnepain P, Eustache F, Groussard M & Platel H. (2023). Musical experience prior to traumatic exposure as a resilience factor: a conceptual analysis. Frontiers in Psychology, 14. https://doi.org/10.3389/fpsyg.2023.1220489

Gross, J. J. (1998). The Emerging Field of Emotion Regulation: An Integrative Review. Review of General Psychology, 2(3), 271-299.

Jung, C. G. (1973). Letters, Vol. I (1906-50), eds. G. Adler & A. Jaffe (R.F.C. Hull, trans.) Princeton, NJ: Princeton University Press.

Karamızrak, N. (2014). Healing effects of sound and music on the organs. Koşuyolu Heart Journal, 17(1), 54-57.

Kross, E., Verduyn, P., Demiralp, E., Park, J. & Lee, D. S. (2013). Facebook Use Predicts Declines in Subjective Well-Being in Young Adults. PLoS ONE, 8(8).

Landis-Shack N., Heinz A. J. & Bonn-Miller M. O. (2017). Music therapy for posttraumatic stress in adults: a theoretical review. Psychomusicology. 27: 334–342. https://doi.org/10.1037/pmu0000192

Lazarus, R. S., & Folkman, S. (1984). Stress, appraisal, and coping. Springer Publishing Company.

Lynn, M. R. (1986). Determination and quantification of content validity. Nursing Research, 35(6), 382-385

MacDonald R., Kreutz G., Mitchell L. (Eds.). (2013). Music, health, and wellbeing. Oxford University Press.

Mas-Herrero, E, Singer, N, Ferreri, L, McPhee, M, Zatorre, RJ, and Ripollés, P. Music Engagement Is Negatively Correlated with Depressive Symptoms during the COVID-19 Pandemic via Reward-Related Mechanisms. Annals of the New York Academy of Sciences (2022) 1519(1):186–98. https://doi.org/10.1111/nyas.14931

McFerran, K. S., Lai, H. I. C., Chang, W.-H., Acquaro, D., Chin, T. C., Stokes, H., & Crooke, A. H. D. (2020). Music, rhythm and trauma: A critical interpretive synthesis of research literature. Frontiers in Psychology, 11. https://doi.org/10.3389/fpsyg.2020.00324

Miller, K., & Flint-Stipp, K. (2019). Preservice teacher burnout: Secondary trauma and self-care issues in teacher education. Issues in Teacher Education, 28(2), 28–45. https://eric.ed.gov/?id=EJ1239631

Molnar-Szakacs, I. & Overy, K. 2006. Music and mirror neurons: from motion to 'e'motion. Social Cognitive and Affective Neuroscience, December 1(3): 235-241. https://doi.org/10.1093/scan/nsl029

Montello, L. 2002. Essential musical intelligence: Using music as your path to healing, creativity, and radiant wellness. Wheaton, IL: Quest Books.

Öztürk, B. K. (2022). An analysis on the relationship between the covid-19 pandemic and music listening habits at Afyon Kocatepe University. Eurasian Journal of Music and Dance(20), 1-15. https://doi.org/10.31722/ejmd.1079518

Patton, M. Q. (2014). Qualitative Research & Evaluation Methods: Integrating Theory and Practice. Sage Publications.

Pourhoseingholi, M. A., Baghestani, A. R., & Vahedi, M. (2012). How to control confounding effects by statistical analysis. Gastroenterology and Hepatology from bed to bench, 5(2), 79-83

Raphael, K. G. (1987). Recall bias: A proposal for assessment and control. International Journal of Epidemiology, 16(2), 167-170

Saarikallio, S. (2011). Music as Emotional Self-Regulation. In: Juslin, P.N., & Sloboda, J.A. (Eds.), Handbook of Music and Emotion: Theory, Research, Applications (pp. 879-903). Oxford University Press.

Schäfer, T., Sedlmeier, P., Städtler, C., & Huron, D. (2013). The psychological functions of music listening. Frontiers in Psychology, 4, Article 511. https://doi.org/10.3389/fpsyg.2013.00511

Swart, I. South African Music Learners and Psychological Trauma: Educational Solutions to a Societal Dilemma. J. Transdiscipl. Res. South. Afr. 2013, 9, 113–138.

Turhal, E. (2019). Sanat ve Müzik , In (Ed.) Apaydın, Ö., Müzik Eğitimine Giriş 1. (1st ed., pp. 1–12) Ekin Publisher.

Valkenburg, P. M., Peter, J. & Schouten, A. P. (2006). Friend networking sites and their relationship to adolescents' well-being and social self-esteem. CyberPsychology and behavior, 9(5), 584-590.

Witte, M., Spruit, A., van Hooren, S., Moonen, X., Stams, G.J., 2020. Effects of music interventions on stress-related outcomes: a systematic review and two metaanalyses. Health Psychol. Rev. 14 (2), 294–324. https://doi.org/10.1080/17437199.2019.1627897