

The Influence of Musical Genres on Emotional State and Social Identity: An Experimental Study

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The aim of this study is to examine how listening to music from different genres influences listeners' emotional states and social identities, as well as to determine the role of demographic factors (age, gender) in these changes. The sample consisted of students from the Yancheng Teachers University, China. Participants were randomly assigned to three experimental groups – Folk ($n = 114$), Rock ($n = 113$), and Pop ($n = 114$) – and one control group ($n = 116$). Over four weeks, participants in the experimental groups were required to listen to 12 playlists, each comprising 5–7 songs. Before and after each listening session, participants assessed their positive and negative affective responses. Additionally, participants completed surveys using the Perceived Stress Scale and the Collective Self-Esteem Scale both prior to and following the experiment. The results of the study revealed that listening to music of different genres exerts varying effects on participants' emotional states and social identity. The most pronounced positive changes were observed in the group exposed to pop music: participants in this group demonstrated an increase in positive affect and social identity, accompanied by a decrease in negative affect and perceived stress. Conversely, the group listening to rock music exhibited elevated levels of negative affect and stress, which may reflect the specific emotional impact characteristic of this genre.

Key words: emotional reactions, musical style, personal characteristics, social identity, virtual music communities

Introduction

The construct of social identity occupies a central position within the conceptual framework of the present study, as it serves to explain the relationship between musical genres

and group processes. Within Tajfel and Turner's social identity theory, social identity is understood as a component of an individual's self-concept derived from his or her membership in specific social groups and the significance he/she attaches to that membership (Tajfel & Turner, 2004). In this context, musical

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genres are viewed as cultural markers around which social groups are formed, boundaries between “insiders” and “outsiders” are established, and a sense of community and collective identification is reinforced.

Music functions as a symbolic medium through which individuals can affirm group membership and self-categorization. Listening to shared genres or artists can strengthen interpersonal bonds and collective identification, fostering emotional connection within social groups (Lee et al., 2020). Through common musical experiences, listeners develop shared meanings and collective memories that reinforce in-group cohesion and cultural continuity (Clark & Giacomantonio, 2015). Such processes reveal that the formation of musical communities often mirrors broader social mechanisms of inclusion and exclusion, which are central to the social identity theory (Ellemers et al., 2002; Lonsdale, 2021).

A range of studies confirms that musical preferences can function as tools of self-identification and social categorization, influencing how individuals perceive themselves and others (DeNora, 2006; Lonsdale, 2021; Sloboda & Juslin, 2001). Following this logic, listeners of specific genres such as pop, rock, or folk do not merely respond to emotional stimuli but also engage in a system of symbolic meanings associated with these genres. Shared listening experiences or membership in genre-based communities strengthen in-group cohesion and contribute to the formation of a stable social identity (Bourdieu, 2002; Ellemers et al., 2002; Hesmondhalgh, 2021).

Folk music, incorporating traditions and cultural elements, may contribute to a strengthened sense of belonging to a specific group or cultural tradition (Edensor, 2020). It can foster pride and self-esteem among listeners within their cultural or ethnic community (McGrath & Brennan, 2011). Pop music, by contrast, is oriented toward a wide audience and reflects

contemporary cultural trends, reinforcing a sense of belonging to popular culture and collective identity at large (Liu et al., 2021; Schmutz & van Venrooij, 2021). Rock music, emphasizing individuality and authenticity, can promote affiliation with alternative or countercultural groups, serving as a means of distinct identity formation (Burns, 2020; Olsen et al., 2023).

Therefore, different genres may vary in their capacity to strengthen or transform social identity. While folk music ties listeners to cultural heritage, pop music aligns them with mainstream social values, and rock music may promote individualistic or subcultural identification (Grenfell, 2014; Guerra, 2020). However, despite growing interest in the emotional and social functions of music, previous studies have seldom investigated how these identity-related effects evolve over time under controlled experimental conditions.

Despite the considerable body of research addressing the interrelation between music, emotion, and social identity, the theoretical and empirical foundation in this field remains incomplete. Previous studies have demonstrated that music can evoke a wide range of emotions and serve as a vehicle for shaping the listener’s social experience; however, the mechanisms underlying this influence have not yet been fully elucidated (Sloboda & Juslin, 2001). According to existing research, emotional responses to music depend not only on its structural features but also on individual perceptual characteristics, social context, and cultural background (DeNora, 2006). Nevertheless, the majority of prior studies have focused either on theoretical models or on isolated emotional effects, without considering how specific musical genres influence the dynamics of emotional and social change (DeNora, 2006; Sloboda & Juslin, 2001).

This study addresses these gaps by analyzing how listeners’ emotional states and social

identities change during controlled listening sessions of music from various genres (folk, rock, pop) on the Douban Music platform. It also considers the role of demographic variables (age, gender) in these processes and assesses the dynamics of changes before and after listening, thereby providing a deeper understanding of the mechanisms by which music influences the emotional and social experiences of listeners. The primary research questions are as follows:

RQ1: How do positive and negative emotions change depending on the type of music (Folk, Rock, Pop)?

RQ2: How does social identity change depending on the group (Folk, Rock, Pop)?

RQ3: Do demographic factors (age, gender) influence changes in positive and negative emotions or social identity?

RQ4: Is there a difference in the change in emotions and social identity between groups depending on time (pre- and post-intervention)?

Methods

Participants

Students enrolled in the humanities and social sciences at Yancheng Teachers University in China, specifically those in their second and third years of study, were invited to participate in the study. The inclusion criteria were as follows: age between 19 and 25 years; proficiency in both Chinese and English (to comprehend song lyrics); access to music streaming platforms; no prior experience with musical activities; voluntary participation in the study; and the signing of a consent form agreeing not to listen to any other playlists during the experimental period. A total of 468 written consents were obtained. All participants demonstrated an English proficiency level of at least B2 (Upper-Intermediate), which was verified based on their university

placement test results prior to the study. In the present study, the absence of musical experience was defined as the lack of formal musical education (e.g., no attendance at a music school, college, or specialized courses) and the absence of prior engagement in musical activities, including instrumental performance, ensemble singing, or participation in musical groups.

Subsequently, participants were randomly assigned to three groups – Folk ($n = 117$), Rock ($n = 117$), and Pop ($n = 117$) – as well as to one Control group ($n = 117$). One participant from the Folk group was excluded due to the inability to access music via the Douban Music platform. An additional 10 participants (2 from the Folk group, 4 from the Rock group, 3 from the Pop group, and 1 from the Control group) were removed from the analysis due to missed sessions and/or incomplete questionnaires. The final sample comprised 114 participants in the Folk group, 113 in the Rock group, 114 in the Pop group, and 116 in the Control group (see Figure 1).

The mean ages were as follows: Folk group, 22 ± 0.7 years; Rock group, 22 ± 0.5 years; Pop group, 22 ± 1.3 years; and Control group, 21 ± 1.1 years. In the Folk group, the gender distribution was 52% male and 48% female; in the Rock group, 50% male and 50% female; in the Pop group, 47% male and 53% female; and in the Control group, 51% male and 49% female. A preliminary power analysis was conducted using G*Power 3.1 to determine the minimum required sample size for detecting a medium effect size ($f = 0.25$) at a significance level of $\alpha = 0.05$ and a statistical power of 0.80 in a repeated-measures ANCOVA design with four groups. The results indicated that a minimum of 280 participants was necessary. Accordingly, the actual sample of 457 participants exceeded this threshold, ensuring adequate statistical power and the robustness of the obtained results.

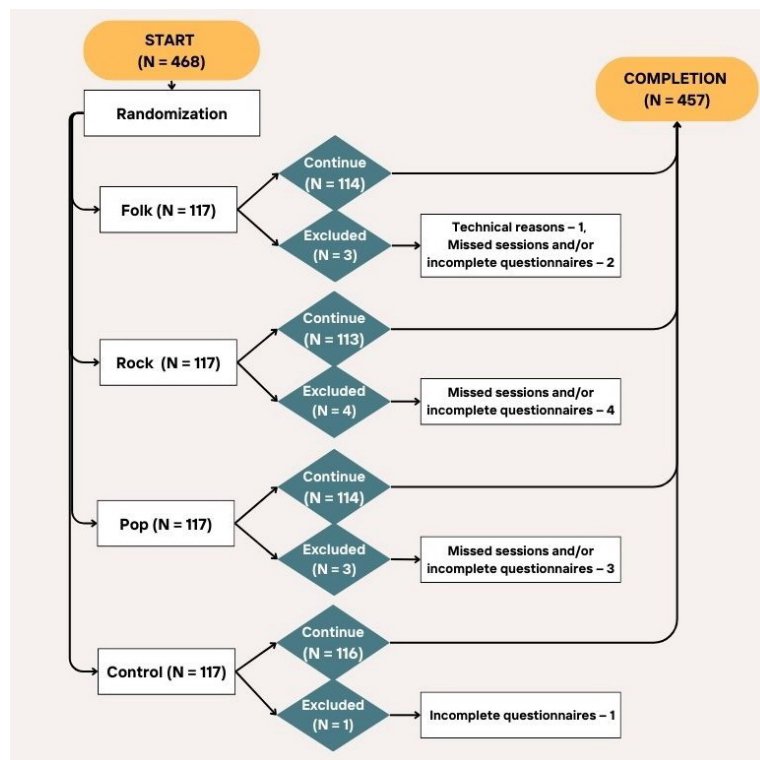


Figure 1 Research participant flow.

Data Collection Procedure

Data on perceived stress and social identity were collected twice: before and after the intervention. Participants evaluated their positive and negative affect before and after each playlist listening session, resulting in a total of 24 assessments. To ensure anonymity, no personally identifiable information was stored. Participants were informed of the study procedures and conditions prior to the commencement of the experiment and were advised of their right to withdraw at any time. No personal data were collected or retained, and participation in the study was entire-

ly anonymous. The study received approval from the Yancheng Teachers University's Ethics Committee (Protocol No. LS 4515782).

Intervention

The intervention was conducted over a four-week period in April 2024. Each group was required to listen to 12 playlists (i.e., sets of compositions corresponding to the designated genre) during this period. Specifically, participants were instructed to listen to three playlists per week, with each listening session lasting 30 minutes. Each playlist comprised 5–7 songs per session, thereby ensuring variety while remaining within the genre asso-

ciated with the respective group. In total, the researchers selected 20 songs based on the most popular tracks on Douban Music in the chosen musical styles; examples are provided in Table 1. Although the songs within the playlists were repeated, their recurrence was evenly distributed.

To ensure the integrity of the intervention, participant activity was regularly monitored via the Douban Music Platform. While students were permitted to reschedule a session for another day, they were required to complete all 12 sessions within the four-week period. Additionally, participants were instructed to complete a Google Form to assess their emotional responses both before and after each session, a process which required approximately 5–7 minutes per session.

Participants in the control group did not listen to any music; instead, they completed questionnaires to self-assess their emotional state (three days per week over four weeks,

totaling 12 questionnaires), as well as their perceived stress and social identity (administered at the beginning and end of the intervention). They were granted access exclusively to specially curated playlists and did not use the platform's social features (such as comments, ratings, or discussions), thereby eliminating the influence of additional emotional stimuli unrelated to the act of listening to music. Consequently, the potential impact of Douban Music's interface and interactive functions on participants' emotional responses was minimized.

The level of individual activity on the platform strictly adhered to the study design: all participants listened to three playlists per week over a four-week period, and the listening data were continuously monitored by the researchers. Regarding possible external influences – such as stress, academic workload, or other emotional events – participants completed the *Perceived Stress Scale* (PSS) before

Table 1 *Examples from participants' playlists*

Folk	Rock	Pop
<i>Puff the Magic Dragon, Peter, Paul & Mary</i>	<i>Under Pressure, Queen, David Bowie</i>	<i>Earth Song, Michael Jackson</i>
<i>Heart of Gold, Neil Young</i>	<i>High Hopes, Pink Floyd</i>	<i>Communication, The Cardigans</i>
<i>Smooth (风平浪静), Liang Xiaoxue</i>	<i>Remember That Night, David Gilmour</i>	<i>Life is Like a Summer Flowers, Pu Shu</i>
<i>Gift" at Sogetsu Hall, Aoba Ichiko</i>	<i>Abbey Road, The Beatles</i>	<i>This Love, Maroon 5</i>
<i>Wild World, Cat Stevens</i>	<i>Stairway To Heaven, Led Zeppelin</i>	<i>Flowers, Miley Cyrus</i>
<i>Live in Dublin, Leonard Cohen</i>	<i>Forever Love, X JAPAN</i>	<i>White Flag, Dido</i>
<i>Song of Four Seasons, Yoko Seri</i>	<i>Dream On, Aerosmith</i>	<i>The Sweet Escape, Gwen Stefani</i>
<i>The Night March of the Chrysanthemums, Jiao Gong Band</i>	<i>Rescued, Foo Fighters</i>	<i>Cry Me A River, Justin Timberlake</i>

and after the intervention. This instrument made it possible to account for the overall level of stress as a potential uncontrolled variable.

Measures

In this study, three assessment instruments were utilized: the Positive and Negative Affect Schedule, the Perceived Stress Scale, and the Collective Self-Esteem Scale (Social Identity). Additionally, respondents provided information regarding their age and gender. Social identity was assessed using the Collective Self-Esteem Scale (CSES) in its original, general form, which captures participants' broader social identity rather than identification specifically related to musical genres.

The Positive and Negative Affect Schedule (PANAS) was employed to assess participants' emotional states before and after each session, specifically focusing on both positive and negative affect (Crawford & Henry, 2004). This instrument comprises 20 affective terms, with 10 items measuring positive emotions (e.g., joy, interest, enthusiasm, satisfaction)

and 10 items assessing negative affect (e.g., fear, anger, anxiety, sadness). Respondents indicated the extent to which they experienced each emotion at the present moment using a 5-point Likert scale, where 1 corresponds to "do not feel at all" and 5 to "feel very strongly."

The Perceived Stress Scale (PSS) consists of 10 items designed to evaluate the level of stress perceived by the respondent over the past month (Cohen et al., 1983). Example items include: "In the last month, how often have you felt nervous and stressed?" and "In the last month, how often have you been angered because of things that were outside of your control?" Each item is rated on a scale from 1 to 5, with 1 indicating "never" and 5 indicating "fairly often."

The Collective Self-Esteem Scale was used to assess the degree of social identity (Lage-Gómez & Cremades-Andreu, 2021). The scale comprised 16 items divided into four subscales: membership esteem, private collective self-esteem, public collective self-esteem, and importance to identity. Each item on the scale was rated on a scale from 1 to 7 (1 = strong-

Table 2 *Structure and reliability of the Collective Self-Esteem Scale*

Subscale	What it shows	Example Item	Cronbach Alpha
<i>Membership esteem</i>	It shows to what extent participants believe they deserve to be members of their social group	<i>I am a worthy member of the social groups I belong to</i>	0.81
<i>Private collective self-esteem</i>	Own judgment about their social group	<i>I often regret that I belong to some of the social groups I do</i>	0.84
<i>Public collective self-esteem</i>	It shows how positively others evaluate this social group	<i>Overall, my social groups are considered good by others</i>	0.75
<i>Importance to identity</i>	The importance of membership in the social group for self-esteem	<i>Overall, my group memberships have very little to do with how I feel about myself</i>	0.77

ly disagree; 7 = strongly agree). The structure and reliability of the collective self-esteem scale are presented in Table 2.

The study employed validated Chinese versions of all psychometric instruments used. To assess positive and negative affect, the Chinese version of the Positive and Negative Affect Schedule (PANAS), which had been adapted and validated on a representative sample of Chinese university students, was utilized (Chen et al., 2016). The scale demonstrated good internal consistency (Cronbach's $\alpha = 0.82$ for positive affect and 0.85 for negative affect).

Perceived stress was measured using the Chinese version of the Perceived Stress Scale (PSS-10), whose psychometric reliability was confirmed in the study by Lu et al. (2017), showing internal consistency of $\alpha = 0.86$. To evaluate social identity, the Chinese version of the Collective Self-Esteem Scale validated on a Chinese student sample was employed (Zhang, 2005). In the present study, Cronbach's alpha coefficients across subscales ranged from 0.75 to 0.84, consistent with previously reported findings.

Statistical Data Analysis

Data were screened for normality. The Shapiro-Wilk test for normality yielded a statistic of 0.89 ($p = 0.23$), further confirming that the data were normally distributed and suitable for parametric testing. Levene's test for homogeneity of variances indicated that variances were equal across groups ($p > 0.05$), thereby satisfying this assumption.

To examine how the outcome measures (positive and negative affect, perceived stress, and social identity) changed as a function of a group (Folk, Rock, Pop, and Control) over time (pre- and post-intervention), a Repeated Measures ANCOVA was employed. The dependent variables were positive and negative affect,

perceived stress, and social identity; the independent variable was group (Folk, Rock, Pop, and Control); and age and gender were included as covariates. A linear relationship between each covariate and the dependent variables was observed, which supports the assumptions for ANCOVA. The assumption of homogeneity of regression slopes was also tested and confirmed, indicating that the effect of the covariates on the dependent variables was consistent across all groups.

Bonferroni post-hoc tests were utilized to further elucidate significant differences between the groups. All statistical analyses were performed using IBM SPSS, version 27.

Results

Descriptive statistics for the variables before and after the intervention for each group are presented in Table 3. Prior to the intervention, levels of positive affect were approximately equivalent across groups; however, following the intervention, the Pop group exhibited the greatest increase ($M = 2.86$, $SD = 0.69$), whereas the Rock group's level remained nearly unchanged ($M = 2.58$, $SD = 0.74$). Negative affect decreased the most in the Pop group after the intervention ($M = 1.97$, $SD = 0.88$).

To enhance the interpretability of the results, 95% confidence intervals (CIs) for means were calculated and integrated into the results. For instance, positive affect in the Pop group after the intervention reached $M = 2.86$, $SD = 0.69$, 95% CI [2.74, 2.98], while the Rock group showed $M = 2.58$, $SD = 0.74$, 95% CI [2.44, 2.72]. For negative affect, the Pop group demonstrated $M = 1.97$, $SD = 0.88$, 95% CI [1.80, 2.14], compared to the Rock group's $M = 2.64$, $SD = 0.82$, 95% CI [2.50, 2.78]. Similarly, perceived stress (PS) after the intervention showed $M = 2.96$, $SD = 0.80$, 95% CI [2.82, 3.10] for the Pop group and $M = 3.29$, $SD = 0.79$, 95% CI [3.15, 3.43] for

Table 3 *Descriptive statistics for variables before and after the intervention for each group*

	Folk		Rock		Pop		Control	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
PA before	2.53	0.71	2.57	0.66	2.64	0.80	2.51	0.68
NA before	2.24	0.69	2.31	0.73	2.28	0.77	2.36	0.75
PA after	2.76	0.55	2.58	0.74	2.86	0.69	2.63	0.81
NA after	2.31	0.71	2.64	0.82	1.97	0.88	2.29	0.64
PS before	3.14	0.73	2.96	0.70	3.18	0.69	3.21	0.68
PS after	2.61	0.83	3.29	0.79	2.96	0.80	3.33	0.77
Social Identity (Pre)	3.77	0.73	3.98	0.66	4.06	0.69	4.03	0.72
Social Identity (Post)	3.84	0.77	3.75	0.60	4.28	0.72	4.16	0.76

the Rock group. Social identity increased most prominently in the Pop group ($M = 4.28$, $SD = 0.72$, 95% CI [4.14, 4.42]), compared to smaller changes in the Folk and Rock groups.

Prior to the intervention, the levels of positive affect were approximately equivalent across groups; however, following the intervention, the Pop group exhibited the greatest increase ($M = 2.86$, $SD = 0.69$), whereas the Rock group remained nearly unchanged ($M = 2.58$, $SD = 0.74$). Negative affect decreased most markedly in the Pop group following the intervention ($M = 1.97$, $SD = 0.88$). With respect to perceived stress, increases were observed in the Rock and Control groups after the intervention, whereas decreases were noted in the Folk and Pop groups. Additionally, social identity slightly declined in the Folk and Rock groups post-intervention, while it increased in the Pop group.

The ANCOVA results for positive affect (PA), negative affect (NA), perceived stress (PS), and social identity are presented in Table 4. For positive affect, the difference between groups was statistically significant ($F = 8.77$, $p < 0.001$), indicating that musical genre influences participants' positive affect. Changes in positive affect from pre- to post-intervention were also statistically significant ($F = 24.45$, $p < 0.001$). A statistically significant interac-

tion between group and time was observed ($F = 5.73$, $p = 0.016$), suggesting that the changes in positive affect depended on both the musical genre and the time of assessment. Age ($p = 0.147$) and gender ($p = 0.194$) did not have a statistically significant impact on positive affect.

The ANCOVA results revealed significant differences in positive affect (PA) between the groups ($F(3, 452) = 8.77$, $p < .001$, $\eta^2 = 0.14$), indicating a large effect size. The effect of time was also significant ($F(1, 452) = 24.45$, $p < .001$, $\eta^2 = 0.22$), suggesting substantial improvement in positive affect after the intervention. The interaction between group and time ($F(3, 452) = 5.73$, $p = .016$, $\eta^2 = 0.08$) indicated a medium effect, reflecting that changes over time varied by music genre.

For negative affect (NA), the group effect was significant ($F(3, 452) = 8.24$, $p < .001$, $\eta^2 = 0.11$), indicating a medium-to-large effect size. The time effect was also significant ($F(1, 452) = 32.12$, $p < .001$, $\eta^2 = 0.25$), demonstrating a strong overall reduction in negative affect after listening to music. The interaction of group and time ($F(3, 452) = 7.08$, $p = .025$, $\eta^2 = 0.06$) suggested a medium effect.

For perceived stress (PS), significant group differences were found ($F(3, 452) = 9.86$, $p < .001$, $\eta^2 = 0.12$), indicating a medium-to-large

Table 4 ANCOVA results

Source of variation	<i>F</i>	<i>p</i>	η^2
PA			
Group (Folk, Rock, Pop, Control)	8.77	<0.001*	0.14
Time (before and after)	24.45	<0.001*	0.22
Group $\times$ time interaction	5.73	0.016*	0.08
Age	2.19	0.147	0.02
Gender	0.78	0.194	0.01
NA			
Group (Folk, Rock, Pop, Control)	8.24	<0.001*	0.11
Time (before and after)	32.12	<0.001*	0.25
Group $\times$ time interaction	7.08	0.025*	0.06
Age	1.63	0.241	0.01
Gender	0.89	0.521	0.01
PS			
Group (Folk, Rock, Pop, Control)	9.86	<0.001*	0.12
Time (before and after)	1.14	0.619	0.01
Group $\times$ time interaction	4.31	<0.038*	0.03
Age	0.88	0.523	0.01
Gender	1.26	0.342	0.01
Social Identity			
Group (Folk, Rock, Pop, Control)	1.54	0.118	0.02
Time (before and after)	13.77	<0.001*	0.25
Group $\times$ time interaction	5.28	0.008*	0.10
Age	4.68	0.032*	0.06
Gender	0.79	0.319	0.01

Note. * $p < 0.05$

effect size, and the interaction between group and time was significant ($F(3, 452) = 4.31, p = .038, \eta^2 = 0.03$), corresponding to a small-to-medium effect.

Finally, for social identity, the main effect of time was significant ($F(1, 452) = 13.77, p < .001, \eta^2 = 0.25$), reflecting a large effect size and indicating a notable strengthening of social identity following the intervention. The interaction between group and time was also significant ($F(3, 452) = 5.28, p = .008,$

$\eta^2 = 0.10$), corresponding to a medium-to-large effect, suggesting that the enhancement of social identity varied across music genres.

Confidence intervals for effect sizes were also added for each ANCOVA outcome to enhance precision and interpretability. For positive affect, $\eta^2 = 0.14$, 95% CI [0.08, 0.20]; for negative affect, $\eta^2 = 0.11$, 95% CI [0.06, 0.17]; for perceived stress, $\eta^2 = 0.12$, 95% CI [0.07, 0.18]; and for social identity, $\eta^2 = 0.10$, 95% CI [0.05, 0.15]. These intervals provide addition-

al insight into the robustness and practical significance of the observed effects.

Regarding negative affect (NA), the difference between groups was significant ($F = 8.24, p < 0.001$), indicating that the type of music influences negative affect. Changes in negative affect from pre- to post-intervention were also significant ($F = 32.12, p < 0.001$), confirming the effectiveness of the intervention. Moreover, the interaction between group and time was statistically significant ($F = 7.08, p = 0.025$), suggesting that changes in negative affect varied according to both musical genre and the timing of measurement. Age ($p = 0.241$) and gender ($p = 0.521$) did not have a significant effect on negative affect.

Regarding perceived stress (PS), the changes in stress levels from pre- to post-intervention were not statistically significant ($F = 1.14, p = 0.619$), indicating that there was no overall effect on stress levels over time, regardless of the elapsed time since the intervention. In other words, the intervention did not result in a general reduction in stress. However, the interaction between group and time was statistically significant ($F = 4.31, p = 0.038$), suggesting that changes in stress levels depended on the musical genre listened to by participants and whether the intervention had occurred. This implies that the effect of music on stress levels may manifest differently over time, with changes observable only in specific groups or during certain periods. Age ($F = 0.88, p = 0.523$) and gender ($F = 1.26, p = 0.342$) did not exert a statistically significant influence on stress levels, indicating that these factors did not contribute to the observed changes in stress levels in this context and did not affect the primary outcomes.

Regarding social identity, the difference between groups was not statistically significant ($F = 1.54, p = 0.118$), indicating that there were no substantial variations in social identity

based on musical genre. However, changes in social identity from pre- to post-intervention were statistically significant ($F = 13.77, p < 0.001$), suggesting that the intervention influenced participants' social identity. Additionally, a statistically significant interaction between time and group was observed ($F = 5.28, p = 0.008$), implying that the changes in social identity were contingent on both the musical genre and the timing of the measurement. Age exerted a significant effect on changes in social identity ($F = 4.68, p = 0.032$), whereas gender did not ($p = 0.319$).

Estimated marginal means for the dependent variables post-intervention, controlling for the influence of covariates (age, gender), are presented in Table 5. Positive affect (PA) was highest in the Pop group ($M = 2.82$), while the Rock group exhibited the lowest value ($M = 2.61$). Negative affect (NA) decreased most substantially in the Pop group ($M = 2.00$), whereas the Rock group retained the highest level ($M = 2.60$). Perceived stress (PS) decreased in the Folk ($M = 2.67$) and Pop groups ($M = 2.89$), whereas it remained elevated in the Rock group ($M = 3.18$) and the control group ($M = 3.28$). Social identity was highest in the Pop group ($M = 4.25$), indicating the greatest enhancement of social identity among participants in that group.

The post-hoc analysis results for the dependent variables following the intervention (see Table 6) indicate that Pop music significantly increased positive affect (PA) compared to both Folk and Rock. Negative affect (NA) was significantly reduced in the Pop group relative to the other genres. Additionally, perceived stress was higher in the Rock group, whereas both the Folk and Pop groups exhibited lower stress levels. Furthermore, social identity was significantly higher in the Pop group, particularly when compared with the Rock group.

Table 5 *Estimated marginal means for the dependent variables post-intervention, controlling for covariates (age, gender)*

	Folk		Rock		Pop		Control	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
PA	2.74	0.55	2.61	0.74	2.82	0.69	2.65	0.81
NA	2.30	0.71	2.60	0.82	2.00	0.88	2.27	0.64
PS	2.67	0.83	3.18	0.79	2.89	0.80	3.28	0.77
Social identity	3.85	0.73	3.77	0.60	4.25	0.72	4.14	0.76

Table 6 *Post-hoc analysis results for the dependent variables post-intervention*

Group Comparison	PA (<i>p</i>)	NA (<i>p</i>)	PS (<i>p</i>)	Social Identity (<i>p</i>)	Group Comparison	PA (<i>p</i>)
Folk vs. Rock	0.412	0.035*	0.026*	0.289	Folk vs. Rock	0.412
Folk vs. Pop	0.048*	0.017*	0.072	0.039*	Folk vs. Pop	0.048*
Folk vs. Control	0.223	0.541	0.318	0.512	Folk vs. Control	0.223
Rock v.s Pop	0.021*	0.002**	0.044*	0.006**	Rock vs. Pop	0.021*

Discussion

According to the results obtained, the type of music significantly influences both positive and negative affect (RQ1). Positive affect increased most markedly in the Pop group, while negative affect decreased in that same group. In contrast, the Rock group exhibited an increase in negative affect, which may indicate heightened emotional arousal or other genre-specific effects. The Folk genre, meanwhile, had a more neutral impact on emotional state. These findings are consistent with the study by Fox and Moore (2021), which reported that positive affect tends to rise in response to music that aligns with listeners' individual preferences. In the present study, the most pronounced increase in positive affect was observed in the Pop group, corroborating the conclusions of Hennessy et al. (2021) that popular music is frequently employed as a tool for mood regulation.

Social identity increased the most in the Pop group compared to the Rock and Folk groups (RQ2). Pop music possesses a more commercial and socially integrated character, which may foster a sense of group belonging (Allen et al., 2021). This finding is consistent with research demonstrating that the choice of a particular musical style can serve as a means of self-expression, influence self-perception, and contribute to public self-esteem (Croom, 2015; Hu & Pu, 2010). In contrast, the Rock group exhibited the smallest increase in social identity, which may be attributed to the more individualistic aspects inherent in this style. These results align with the conclusions of studies that have examined the relationship between listeners' personality traits and their musical behavior (Hall et al., 2016; Lyvers et al., 2020).

Additionally, the stronger sense of social identity observed in the Pop group supports the assumptions of the Social Identity Theory, which holds that individuals with similar mu-

sical tastes experience greater closeness and solidarity (Lonsdale, 2021). Bourdieu's (2002) theory of social transformations and the role of cultural capital in shaping social structures offers another perspective for interpreting these findings. Musical preferences act as a form of cultural capital that can help individuals assert their social position (Fowler, 2020).

Age was found to influence social identity, whereas gender did not significantly affect any of the examined indicators (RQ3). This finding aligns with previous research suggesting that social identity and emotional responses to music evolve with age, as musical preferences may be shaped by social environments and life experiences (Hilsdorf & Bullerjahn, 2021).

Pop music contributed to the enhancement of positive emotions and social identity, whereas rock music elicited mixed emotional responses (RQ4). The interaction between time and group was significant, indicating a dynamic influence of musical styles on the studied variables (RQ4). This dynamic effect may be explained by the evolution of music as a social tool, as described in the works of Sloboda et al. (2020) and Hesmondhalgh (2021, 2022). The continuous interplay between musical influence and emotional responses provides deeper insights into how music, as a social instrument, adapts to changing cultural and technological conditions. Notably, the rise of online platforms and virtual concerts represents a crucial avenue for further research in this domain (Tokareva et al., 2021).

The choice to listen to a specific music style is often associated with self-expression and the construction of personal identity (Hu & Pu, 2010). However, in this study, participants were assigned to specific genre groups and did not choose the type of music they listened to. Therefore, musical preferences were considered an uncontrolled variable, and potential differences in participants' attitudes toward the assigned genres could have influ-

enced their emotional and social responses. Future studies could include an assessment of individual music preferences or provide participants with the option to select preferred genres to better capture the role of personal choice in emotional engagement (Herrera et al., 2018; Santos et al., 2023). When participants perceive themselves as part of a group that has had the experience of listening to music, it can contribute to the improvement of public self-esteem (Croom, 2015). It can enhance a sense of belonging and significance in a public context (Allen et al., 2021).

The findings of the present study have applied relevance beyond academic interpretation and may inform therapeutic, educational, and sociocultural practices. The observed genre-specific effects suggest that pop music, which was associated with increased positive affect and social identity and reduced negative affect and stress, may be considered in preventive and supportive interventions aimed at emotional regulation and social engagement, particularly among students and young adults. In educational contexts, genre-based musical activities may contribute to a more positive emotional climate and foster group cohesion during orientation programs, group events, or psychological support initiatives. At a broader level, the integration of musical genres that promote positive emotions and group belonging into cultural and social programs may support social integration and intercultural dialogue. Overall, the results provide a basis for developing genre-sensitive recommendations for psychologists, educators, and cultural practitioners seeking to enhance emotional well-being and social connectedness through music.

Limitations

This study has certain limitations. First, individual musical preferences of participants

were not taken into account, which may have influenced their emotional responses. Second, the analysis was limited to three music genres, whereas other styles could also have had a significant impact. Future research should expand the range of analyzed genres and consider additional personality traits of participants to provide a deeper understanding of the mechanisms underlying the influence of music on psychological well-being.

Third, the study was conducted over a four-week period without long-term observation of changes in participants' emotional states over time, which limits the ability to assess the long-term effects of music. Notably, musical preferences and emotional responses may vary depending on contextual factors or life events experienced by the participants.

Fourth, music was accessed through a single platform, which may constrain the understanding of how different modes of music consumption affect emotional responses. Considering virtual platforms, such as streaming services or online concerts, in future research could provide further insights into the impact of technology on emotional experiences.

Fifth, the sample was relatively homogeneous in terms of age, social status, and other characteristics, which may affect the generalizability of the findings to a broader population. Specifically, musical preferences and emotional responses may differ across cultural, regional, or social contexts, and these aspects should be explored in future studies.

Sixth, the study did not control for participants' musical preferences, which may have influenced their emotional and social responses to listening to different genres. Participants were assigned to genre groups (folk, rock, pop) experimentally, without the option to select their preferred musical style. This introduces the possibility that personal tastes

and listening habits affected the results, making musical preference an uncontrolled variable. Future research should account for this factor by including a preliminary assessment of musical preferences or by allowing participants to choose a genre, thereby enabling a more precise analysis of individual differences in music perception.

The study's limitations are also linked to the use of screening instruments such as the Perceived Stress Scale (PSS), which captures the general level of subjective stress but does not allow for an in-depth analysis of the underlying mechanisms. In particular, this tool does not reflect individual differences in coping strategies, stress resilience, perceived stressors, or contextual factors influencing emotional responses. Consequently, the recorded stress levels do not clarify which specific mechanisms were activated during participants' interaction with musical stimuli, nor do they explain which individual characteristics may have moderated these effects.

Moreover, the absence of such data restricts the ability to offer a differentiated interpretation of emotional responses and their relationship to musical genres. For instance, the same level of stress across participants may result from entirely different psychological processes — ranging from low stress resilience in some individuals, to active yet ineffective coping strategies in others, or situational factors shaping perception. A more comprehensive assessment of stress, incorporating instruments that measure coping strategies, resilience, and contextual variables, would allow for a more accurate explanation of the variability in emotional responses to musical genres and a deeper understanding of the psychological mechanisms underlying music perception. The inclusion of such measures could substantially enhance the interpretive power of results and enrich the theoretical understanding of the processes involved.

Furthermore, in this study, social identity was operationalized using the general Collective Self-Esteem Scale, which assesses participants' overall collective self-esteem across their social groups rather than their specific identification with the experimentally assigned genre group. As a result, changes in collective self-esteem may partly reflect experiences and events in other life domains (e.g., peer, academic, or family contexts) during the four-week period. Future research should therefore consider using measures that directly tap genre-specific identification in order to more precisely link musical exposure to music-based social identity.

In addition, although positive and negative affect (PANAS) were measured before and after each of the twelve listening sessions, perceived stress (PSS) and social identity (CSES) were assessed only at the beginning and at the end of the four-week intervention. The main analyses therefore focused on aggregated pre- and post-intervention PANAS scores in order to ensure conceptual alignment across outcome measures and to examine overall intervention effects rather than session-specific fluctuations. As a result, fine-grained affective dynamics across individual listening sessions were not analyzed in the present article. Examination of within-session emotional trajectories and short-term dynamics represents an important direction for future research or supplementary analyses.

Conclusions

Pop music exhibited the most pronounced positive impact on emotions and social identity, which may be attributed to its commercially oriented and socially integrative nature. Rock music elicited mixed emotional responses, reflecting its heightened emotional intensity and individualistic characteristics. Folk music demonstrated a comparatively weaker

effect on emotions, suggesting its more neutral role in shaping social identity and emotional reactions.

Age was found to influence the level of social identity, indicating shifts in musical preferences and social connections over time. This finding highlights the potential for further research into the developmental stages of musical preferences across different life periods.

The interaction between time and music genre was significant, underscoring the necessity of considering the evolution of musical preferences and their impact on emotional states throughout the process of music consumption. Thus, the effects of musical styles may vary depending on the sociocultural context and temporal factors.

This study recommends considering the type of music when designing therapeutic programs aimed at enhancing clients' emotional well-being. Pop music may be recommended for fostering positive mood changes, whereas rock music could be beneficial for processing intense emotions such as anger or frustration. Furthermore, the use of musical genres to promote group identity is advisable, particularly in working with youth and socially integrated groups. Incorporating diverse musical genres into educational programs can support social integration and the development of collective identity among students. Additionally, it is essential to consider age-related characteristics when selecting musical pieces for integration into the educational process to maximize their positive impact on students' emotional well-being.

Music platforms can develop personalized recommendations for users based on their emotional responses to different music genres, thereby enhancing the effectiveness of music recommendation systems. Social initiatives may organize music events that bring together individuals with diverse musical preferences to foster social cohesion and

create positive emotional experiences within communities. Such initiatives can also support vulnerable social groups, including youth and immigrants, by promoting inclusivity and social integration through shared musical experiences.

The findings of this study have a wide range of practical implications. In educational settings, the use of musical genres demonstrated to have a positive influence on emotional states and social identity – particularly pop music – can serve as an effective tool for enhancing student engagement and sense of belonging. In psychological and therapeutic practice, musical interventions may be integrated into programs aimed at stress reduction, group cohesion, and emotional well-being support. In sociocultural contexts, such approaches may contribute to the development of more resilient and inclusive communities, especially among youth and vulnerable populations.

In accordance with the principles of open science, the authors affirm their readiness to provide anonymized research data, detailed procedural descriptions, and statistical code upon a justified request from the editorial board or the research community. This commitment ensures transparency, reproducibility, and the potential for further advancement in this field of scientific inquiry.

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