

Self-deprecating Songs Impact on Thoughts and Affects

O Impacto de Músicas Autodepreciativas nos Pensamentos e Afetos

El Impacto de Música Autocrítica en los Pensamientos y Afectos

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Abstract

This study aimed to observe the impact of self-deprecating songs in thoughts and affect, and the role of self-esteem and other music related variables (evaluation and familiarity) in this relationship. A hundred thirty-six participants engaged in an experiment where they listened to a song (self-deprecating/control) and answered: a Word Task, the Positive and Negative Affect Scale, and the Rosenberg Self-esteem Scale, which underwent t-test, bivariate correlation, factorial ANOVA and mediation in JASP. Results indicated that individuals exposed to the self-deprecating song presented more negative associations and negative affects, and less positive affects. Mediation analyses showed two significant models: music - familiarity - positive affects (indirect effects: $\lambda = -0.160$, 95% CI = -0.32 - 0.01, $p < 0.05$, total effects: $\lambda = -0.381$, 95% CI = -0.711 - -0.051, $p < 0.05$), and music - evaluation - negative affects (indirect effects: $\lambda = 0.614$, 95% CI = 0.269 - 0.959, $p < 0.05$, total effects: $\lambda = 0.397$, 95% CI = 0.065 - 0.728, $p < 0.05$). It is possible to conclude that the study's aim was achieved, highlighting the impact of deprecating music on well-being.

Keywords: music; thinking; affect; self-concept.

Resumo

Este estudo objetivou observar o impacto de músicas autodepreciativas nos pensamentos e afetos, e o papel da autoestima e outras variáveis relacionadas à música (avaliação e familiaridade) nessa relação. Cento e trinta e seis sujeitos participaram de um experimento aonde ouviram uma música (autodepreciativa / controle) e responderam: uma tarefa de palavras, a Escala de Afetos Positivos e Negativos e a Escala de Autoestima de Rosenberg, que passaram por teste-t, correlação bivariada, ANOVA fatorial e mediação no JASP. Os resultados indicaram que os sujeitos expostos à música autodepreciativa apresentaram mais associações e afetos negativos e menos afetos positivos. As análises de mediação mostraram dois modelos significativos: música - familiaridade - afetos positivos (efeitos indiretos: $\lambda = -0.160$, IC 95% = -0.32 - 0.01, $p < 0.05$; efeitos totais: $\lambda = -0.381$, IC 95% = - 0.711 - -0.051, $p < 0.05$); e música - avaliação - afetos negativos (efeitos indiretos: $\lambda = 0.614$, 95% IC = 0.269 - 0.959, $p < 0,05$; efeitos totais: $\lambda = 0,397$, IC 95% = 0,065 - 0,728, $p < 0,05$). É possível concluir que o objetivo foi cumprido, destacando o impacto de músicas depreciativas no bem-estar.

Palavras-chave: música; pensamento; afeto; autoimagem.

Resumen

Este estudio tuvo como objetivo observar el impacto de las canciones autodepreciativas en el pensamiento y el afecto, y el papel de la autoestima y otras variables relacionadas con la música (evaluación y familiaridad) en esta relación. 136 sujetos participaron en un experimento donde escucharon una canción (autodesprecio / control) y respondieron: una Tarea de Palabras, la Escala de Afecto Positivo y Negativo y la Escala de Autoestima de Rosenberg, a las que se les realizó una prueba t, correlación bivariada y regresión múltiple en SPSS. Los resultados indicaron que los sujetos expuestos a la canción de autocrítica presentaron más asociaciones negativas y afectos negativos, y menos afectos positivos. Los análisis de mediación mostraron dos modelos significativos: música - familiaridad - afectos positivos (efectos indirectos: $\lambda = -0,160$, IC 95% = -0,32 - 0,01, $p < 0,05$; efectos totales: $\lambda = -0,381$, IC 95% = - 0,711 - -0,051, $p < 0,05$); y música - evaluación - afectos negativos (efectos indirectos: $\lambda = 0,614$, IC 95% = 0,269 - 0,959, $p < 0,05$; efectos totales: $\lambda = 0,397$, IC 95% = 0,065 - 0,728, $p < 0,05$). Es posible concluir que se cumplió el objetivo, destacando el impacto de la música despectiva en el bienestar.

Palabras-clave: música; pensamiento; afecto; autoimagen.

Music is a part of the daily life of most of the global population, being present in many styles and formats. Evidence of this fact is the music industry's earnings forecasts for 2023, which reach over \$65 billion (Statista, 2023). From a social point of view, music is also a cultural resource of extreme significance. It helps the social construction of emotions and conveys the most diverse messages, carrying a network of meanings and feelings according to the individual or group that consumes it (Xu *et al.*, 2021).

But after all, why is music so important to humans? Reflecting on this question, Thompson (2009) offers some intriguing points: Music is ubiquitous (existing in all human cultures previously recorded in diverse formats and genres), social (reaching and representing groups and creating bonds between people), a form of communication even for those who struggle with it, engages innumerable physical and psychological processes in the person that interacts with it (either actively or passively), and finally, through the various aspects that compose it (e.g., time, melody, letter) music has a powerful impact on emotional processes.

This relationship of music with certain feelings and cognitive functions surpasses everyday life, being replicated on the experimental context: On Anderson, Carnagey and Eubanks (2003) experiments, for example, participants exposed to violent lyrics felt more hostile and had more violent thoughts than those who heard nonviolent songs. Greitemeyer (2009) also observed through three experiments that, on the other hand, exposure to prosocial music caused the participants to have more prosocial thoughts, demonstrate more empathy, and engage more in helping behaviors (in this case donating the compensation they received for joining the research).

An explanation for these results can come from the General Learning Model developed by Buckley and Anderson (2006): This theoretical model points out that personal variables (such as age and gender), as well as situational variables (in the present discussion, exposure to a song, for example), impact internal state (composed of cognition, affect, and arousal) both together and independently (Greitemyer, 2022). In the case of music, being exposed to this stimulus could bring up similar content, leading to congruent behavioral routes.

But what are the features of music that increase these effects? Ruth (2018) points out familiarity with the content of the song and the level of attention directed to it as significant factors for music to cause behavioral changes. Pimentel and Günther (2009) observed that the lyrics' content has the most substantial impact on how a song can shape a person's behavior. On the other hand, Ali and Peynircioğlu (2006) demonstrate that the ability of an aspect of music (in this case the lyrics) to influence the person's reaction is varied: In happy and calm songs, for example, the lyrics disturb the experience of these feelings, while in angry and sad songs, the outcome is the opposite.

Consistently, prior research indicates that sad songs are capable of causing a depressed mood more significantly than other media formats (Bogt *et al.*, 2019).

Larwood and Dingle (2022) also observed that participants experienced a greater state of sadness after listening to music that they considered sad, especially when their tendency to ruminate was high. This information is corroborated by Yoon and Rottenberg (2021), who found that both depressed and non-depressed participants had decreased happiness after listening to sad music.

Concerning these results, it's possible to question: why are songs that deal with themes viewed as negative (e.g., losses, break-ups) so popular? Explanations are diverse. Individuals could use sad music that is linked to personal experience to either reflect or to make social comparisons with the performer (desiring to feel less alone, for example) (Friedman *et al.*, 2012). Additionally, Sizer (2019) discusses the hypothesis that sad moods and sad music consumption form a feedback loop, reinforcing each other.

Sachs *et al.* (2015) further point out that the sadness evoked by music can be perceived as pleasurable when: recognized as incapable of causing harm to the subject, when it is aesthetically pleasing, when consuming such media, can bring psychological benefits (such as mood regulation or reflection about past events). These authors also argue that a greater comprehension of the process that makes a negative stimulus achieve a positive outcome might even aid in the treatment of psychopathological disorders, such as depression.

However, there are not only positive effects or immediate consequences for the consumption of sad songs: Although admitting that listening to sad songs can help when the individual is going through difficult times, Van den Tol (2016) warns that this form of media can also be associated with maladaptive coping strategies, such as rumination and social isolation. Thus, it is necessary to understand what are the outgrowths of sad songs consumption, as well as what could cause positive or negative results after this exposure. Based on the previous examples, it is also possible to perceive that even if studies about the impacts of sad songs exist, the research about a specific phenomenon in this field is almost non-existent: self-deprecation.

Self-deprecation is a concept rarely addressed in literature, usually being considered solely as a negative facet of self-esteem. However, Santos *et al.* (2022a) developed an operational definition for self-deprecation, describing it as an attitude composed of characteristics such as a negative self-evaluation (in the affective dimension), beliefs about incapacity and not being worthy (in the cognitive dimension), success avoidance, procrastination, and inability to accept recognition for their doings (in the behavioral dimension). This research also found a high correlation between self-deprecation and self-esteem (Santos *et al.*, 2022). From this result, and considering that few studies investigate the relations of music and self-esteem, the moderating effect of this variable was analyzed.

The Present Study

The previous discussion demonstrates how music is associated with human experience, impacting psychological processes in a complex way. Thus, detailed investigation of the short-term effects of exposure to music that deal with negative themes contributes to the understanding of media psychological effects on its consumers, especially taking into account the relationship between music and well-being (Perkins *et al.*, 2020). Considering this information, and recognizing the importance of understanding how culture elements (in this case music) can affect individual functioning, the present study aimed to observe the effect of self-deprecating music on thoughts and affects, as well as the role of self-esteem (moderator) and other music related variables, evaluation and familiarity (mediators).

Materials and Methods

Participants

The sample consisted of 136 volunteers (68 in each condition), with a mean age of 21.6 years ($SD = 6.61$), mostly women (72.8%), college students (83.1%), and that identified as middle class (51.5%). Sample size was calculated with the online tool WebPower, that suggested an n of at least 123 participants. It was a non-probabilistic convenience sample, invited to participate in the experiment either via social media (mainly WhatsApp and Facebook) or through teachers who offered part of their classes for the research realization. Volunteers aged 18 years or older who provided informed consent and had no difficulty in exposure to the stimulus or in understanding the instructions were considered to participate in the sample.

Procedures

The study followed an experimental design. When asked to participate in the study, the volunteers were informed that it was a research about the relationship between music and psychological processes, and that they would have to listen to a song and answer a short survey. If they agreed to proceed, the volunteers received a booklet with the scales and were instructed to pay attention to the music and to follow it by the lyrics that were printed on the first page of the questionnaire. Finally, they were asked to only start answering the survey after the song ended.

Participants were then exposed to the music from the condition they were assigned (whether being a Brazilian Portuguese cover of the song “Pity Party” by singer Melanie Martinez on the experimental condition, or “Tempos Modernos” (Modern Times) performed by Jota Quest, in the control condition (details will be offered in the next

session). The songs were evaluated by psychologists specializing in media research, taking into account the concept of self-deprecation and how similar these stimuli were to it.

Data collection was performed both individually (with only the participant and the researcher) and collectively (in classrooms), in both cases being conducted in quiet and controlled rooms. Volunteers were assigned to the experimental or control group at random (by drawing lots). The audio equipment chosen varied according to the demands of the situation: in individual applications, headphones were plugged into a computer, which could have the volume adjusted by the participant himself during exposure to the stimulus to avoid discomfort. When collective applications were executed, the chosen material was a smartphone connected to a Bluetooth speaker. In total, 64 volunteers participated individually and 72 in their classrooms, and no significant differences in responses to the main study variables were found between these conditions.

The experiment followed the ethical recommendations for research with Human Beings (Resolution 510/16), and its project was evaluated and approved by the designated Research Ethics Committee (CAEE: 88775318.0.0000.5188).

Materials

The Brazilian versions of the following instruments were applied for data collection. Furthermore, the described songs were used on experimental and control conditions.

Paired Words

To measure the cognitive effect of music, a task was developed based on Anderson *et al.* (2003) study about violent music: ten pairs of words (in the current study one being self-deprecating and one ambiguous) were presented to the participant, and they should indicate how closely the two words were associated, using a Likert scale ranging from 1 (not at all related) to 5 (fully related). The words used as deprecating stimulus were: failed, despised, inferior, useless, ridiculous, stupid, loser, bad, and incapable. On the other hand, the words chosen as an ambiguous stimulus were: small, indecisive, fear, mistake, peculiar, judgment, last, hurt, weird and zero. The 20 words were picked from lists developed by two psychologists with experience in the topic.

Positive Affects Negative Affects Scale (PANAS)

A measure consisting of 20 words referring to feelings and emotions (e.g., interested, frightened). To answer, participants should use a Likert scale to indicate how much they felt this certain emotion (from “not at all” to “extremely”) in the proposed time period (in this study, we used the time interval “at the current moment”). The

applied version of the scale was the Portuguese adaptation by Galinha and Ribeiro (2005), that has a two-factor organization: positive ($\alpha = 0.88$, scores in the present study ranging from 1 to 4.2) and negative ($\alpha = 0.83$, ranging from 1 to 3) affects.

Rosenberg Self-Esteem Scale ($\alpha = 0.87$)

Scale consisting of 10 Likert-type items (from “disagree” to “agree”, scores ranged between 1.4 and 4) to measure global self-esteem. It was created by Rosenberg (1989) and validated in Brazilian context by Hutz and Zanon (2011). An example of an item used in this instrument is “On the whole, I am satisfied with myself”.

Music-Related Questions

After the scales, participants answered questions about their favorite music genres, how often they listened to music, and whether they used to listen to songs similar to what they were exposed to in the experiment (familiarity). Finally, it was asked how much they saw the presented song as deprecating (varying on a Likert-type scale ranging from ‘not at all’ to ‘extremely’).

Sociodemographic Questionnaire

In order to characterize the sample, questions such as age, gender and social class were utilized.

Pity Party

A song performed by the American singer Melanie Martinez, released on her album *Cry Baby*, from 2015. The version applied in the study was a Portuguese cover made by Amanda Lampert, available on YouTube since 2016, with a duration of three minutes and 20 seconds. The song describes the story of a girl who is neglected at her birthday party. The lyrics show not only the character’s distress with the situation, but how she seems to blame herself for being in that situation, as exposed in the section “Maybe if I knew all of them well/ I wouldn’t have been trapped inside this hell that holds me/ Maybe if I casted out a spell/ But told them decorations were in pastel ribbons”.

Modern Times

The song chosen for the control condition was composed in 1982 by Lulu Santos (a Brazilian artist), although the chosen version is a re-recording of 2012 by the group Jota Quest, with a duration of 3 minutes and 34 seconds. Contrary to the previously mentioned song, *Modern Times* has as its main themes the hope for a better future and

the desire to live life to its fullest, which are evidenced in the verses “I see a better life in the future / I see it above of the wall”, and “Let’s live all there is to live / Let’s allow ourselves”.

Data Analysis

The software JASP was used, specifically the following analyzes: descriptive analysis to characterize the sample, the t-test for independent samples to see if the differences between the two groups were significant, the bivariate correlation to verify the relationship between the proposed constructs, the factorial ANOVA to test the role of self-esteem as a moderator, and mediation analysis to test the role of song evaluation (as deprecating) and familiarity in the prediction of thoughts and affects. Mediation models were tested using an ML (Maximum Likelihood) estimator and 1000 bootstrapped samples, and were carried out after checking the necessary assumptions (continuous variables, with linear relationship and approximately normal distribution).

Results

Manipulation Check

First, it was observed if the experimental group indeed perceived their song as more self-deprecating than the control group. This information was proven by the t-test ($t = -11.60, p < 0.001$), thus providing evidence that the manipulation was successful.

Main Results

Sample Characterization

It was observed that of the five most cited music styles, Pop was the most consumed by the participants (they could name up to three of their favorite styles), being mentioned by almost 53% of the sample. Besides, the vast majority (79.1%) of the participants often listen to music several times a day. Finally, when asked about familiarity with songs similar to those used in the developed conditions, the volunteers demonstrated greater intimacy with the control condition song. The detailed results are shown in **Table 1**.

Table 1
Descriptive Analysis

Variables		%
Music genre Preference.	Pop	52.9%
	MPB (Brazilian Folk Music)	47.1%
	Rock	34.5%
	Indie	22.1%
	Religious	9.5%
Frequency of music listening.	Sometimes a week	9.6%
	Once per day	11.2%
	Many times a day	79.1%
Familiarity with the song.	Experimental Group	
	Yes	34.8%
	No	65.2%
	Control Group	
	Yes	76.1%
	No	23.9%

Comparison Between the Groups

The t-test presented results that participants who were exposed to the self-deprecating music experienced more negative affect and negative thoughts ($t = 2.47$, $p < 0.05$, $t = 1.95$, $p < 0.05$, respectively) and less positive affects ($t = -2.25$, $p < 0.05$). Furthermore, it was observed that there was no significant variation between the self-esteem of the two groups. More details are provided in **Table 2**.

Table 2
Condition Comparison

	Experimental Condition	Control Condition	<i>t</i>
	Mean (SD)	Mean (SD)	
Familiarity	0.35 (0.47)	0.77 (0.42)	5.46**
Self-esteem	2.88 (0.53)	2.83 (0.53)	0.54
Positive Affects	2.09 (0.71)	2.37 (0.73)	-2.25*
Negative Affects	1.53 (0.50)	1.33 (0.42)	2.47*
Thoughts	2.72 (0.68)	2.50 (0.64)	1.95*

* $p < 0,05$

Correlations

After the t-test, a bivariate correlation was performed between self-esteem, positive and negative affect, deprecating thoughts, evaluating the song as deprecating

and song familiarity. As **Table 3** shows, song evaluation correlated only to negative and positive affects ($r = 0.35, p < 0.01, r = -0.17, p < 0.05$, respectively).

Table 3

Means, Standard Deviations and Bivariate Correlations

	Mean (SD)	1	2	3	4	5	6
1- Familiarity	0.55 (0.49)	-					
2- Evaluation	2.59 (1.51)	-0.39**	-				
3- Positive Affect	2.23 (0.73)	0.23**	-0.17*	-			
4- Negative Affect	1.43 (0.47)	-0.01	0.35**	-0.15	-		
5- Deprecating Thoughts	2.61 (0.67)	-0.02	0.09	0.03	0.08	-	
6- Self-esteem	2.85 (0.53)	-0.09	-0.08	0.30**	-0.21**	-0.10	-

Notes: * $p < 0.05$ ** $p < 0.01$

Factorial ANOVA

The factorial ANOVA showed that self-esteem was not a significant moderator in the prediction relations between self-deprecating music and deprecating thoughts [$F(1,41) = 1.0, p = 0.23$], positive affect [$F(1,41) = 1.42, p = 0.08$] and negative affect [$F(1,41) = 0.95, p = 0.56$].

Mediation Models

The models aimed to observe which of the music-related variables (evaluation and familiarity) mediated the impact of experimental manipulation. The first model (**Figure 1**) used manipulation (music) as an independent variable, positive affects as dependent and familiarity as a mediator, showing significant indirect and total effects (indirect effects: $\lambda = -0.160, 95\% \text{ CI} = -0.32 - 0.01, p < 0.05$, total effects: $\lambda = -0.381, 95\% \text{ CI} = -0.711 - -0.051, p < 0.05$). Therefore, the negative impact of self-deprecating music in positive affects depends on the level of familiarity with this type of stimulus.

The second model (**Figure 2**) sought to explain negative affects through manipulation (music) as an independent variable and evaluation as a mediator. Again, indirect and total effects were observed (indirect effects: $\lambda = 0.614, 95\% \text{ CI} = 0.269 - 0.959, p < 0.05$, total effects: $\lambda = 0.397, 95\% \text{ CI} = 0.065 - 0.728, p < 0.05$). Thus, self-deprecating songs impact in negative affects depends on the evaluation of a music as deprecating.

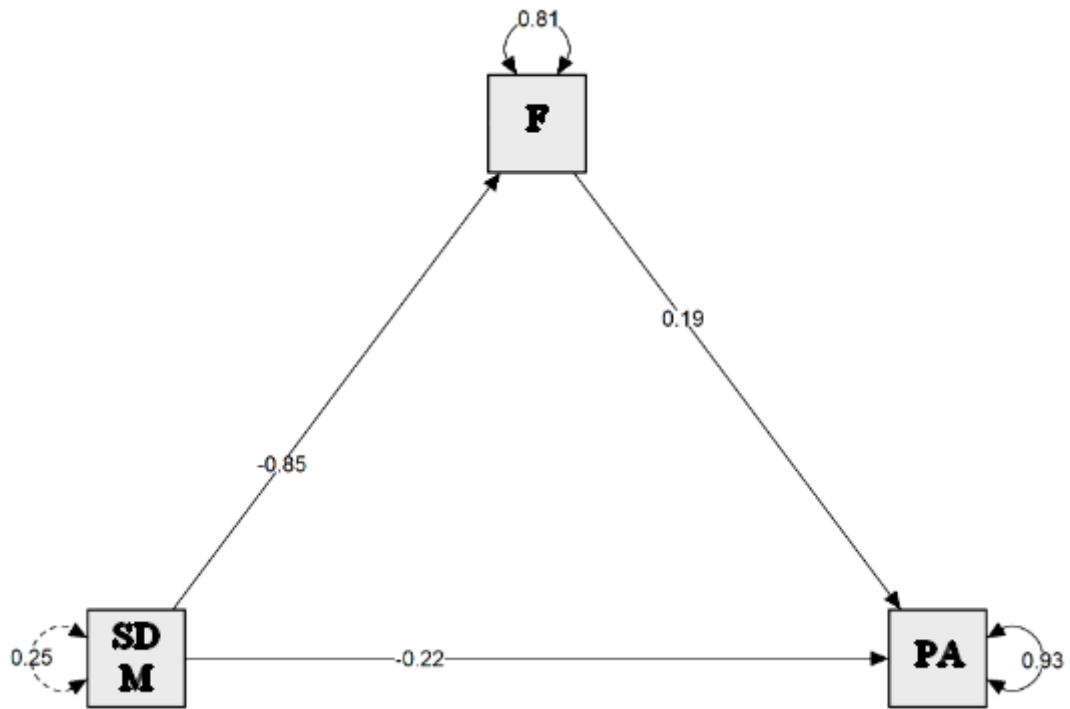


Figure 1. Model with Positive Affects

Notes: SD M = Self-deprecating Music, F = Familiarity, PA = Positive Affects.

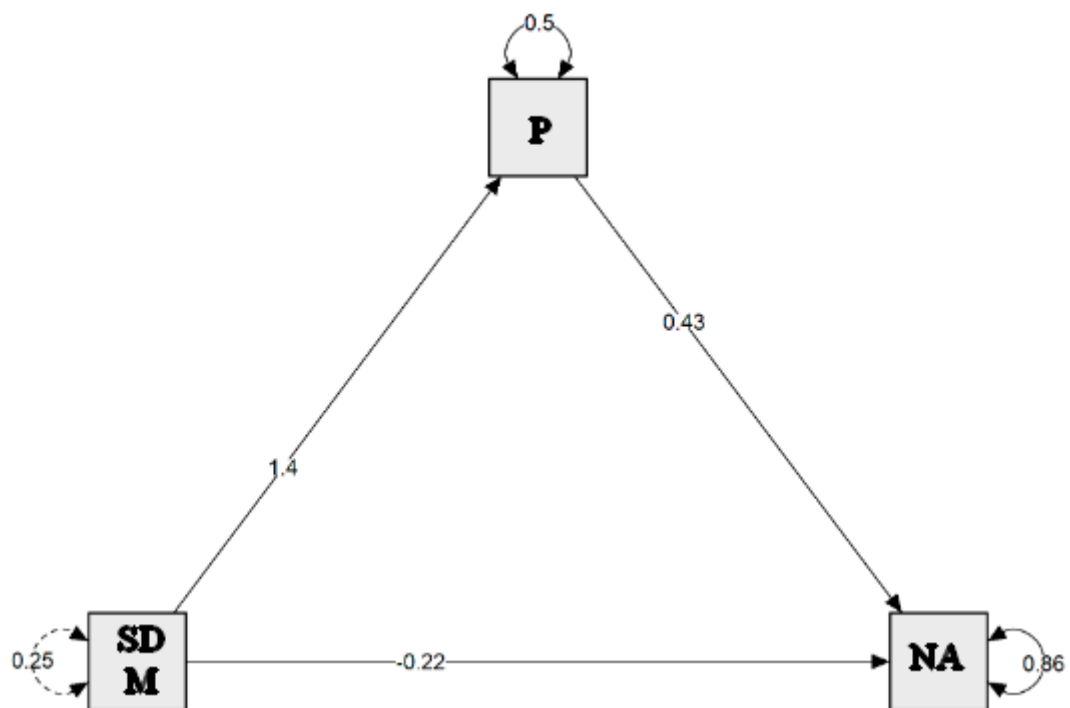


Figure 2. Model with Negative Affects

Notes: SD M = Self-deprecating Music, P = Evaluation, NA = Negative Affects.

Discussion

This study aimed to observe the influence of self-deprecating music on thought and affects, also understanding how self-esteem and music-related variables impact these relationships. The results indicate that this type of music can increase the incidence of deprecating cognitive associations and negative affective states. This information is in line with experiments on the influence of sad music that preceded this study (Larwood & Dingle, 2021; Yoon & Rottenberg, 2022) and will be discussed below.

Music's impact on affects and cognition is also theoretically supported by the GLM: situational variables, such as the media the individual is being exposed to, affect the current internal state of functioning, which includes thoughts and feelings, according to their content (Greitemeyer, 2022). Thus, a self-deprecating song leads to a state coherent with its themes, through the activation of similar knowledge structures (Anderson & Bushman, 2018).

However, it is important to point out that the present study used a cover of an American song, due to a difficulty in locating a Brazilian song that had self-deprecation as its focus. As pointed out by previous studies, the most popular musical genres in Brazil tend to focus on social (mainly romantic) relationships and affectivity (Abreu *et al.*, 2020; Santos *et al.*, 2022b). Therefore, the music choice could impact the results due to cultural differences, and further research could compare impacts of self-deprecating versus relationship-themed sad songs.

Discussing the other variables observed in the present study, self-esteem only correlated with positive and negative affects. This relationship is consistent with results from other studies, such as Selensky and Carels (2021). Self-esteem was also not a significant moderator in the prediction model, with the music as the independent variable. One explanation for this outcome is that self-esteem, being a global self-evaluation, is more directly associated with more general cognitive patterns, especially a positive self-description, thus having little impact on a word association task (Danielsson & Bengtsson, 2016). Another point is that self-esteem is way more pertinent to affective rather than cognitive variables (Brown, 1993).

Besides, the fact that self-deprecating music had an impact on thoughts and affect of this nature, while self-esteem remained stable between groups, strengthens the hypothesis that these are two different constructs. While self-esteem is the more affect-related and stable domain (Brown, 1993) self-deprecation reaches more characteristics and can be more affected by external stimulus such as the media consumed (Santos *et al.*, 2022). However, further studies about the relationships of self-esteem with music listening are needed to understand the results.

Familiarity with the consumed song mediated the relationship between self-deprecating music and positive affects. Corroborating with Ruth (2018), familiarity

with music can activate previous knowledge about this stimulus, thus impacting the person's current affective state. Therefore, familiarity with the music consumed can increase its impacts on the internal state (Park *et al.*, 2019), requiring future studies to investigate in more detail the impact of this variable. Still on this topic, it's relevant to point out that participants' familiarity with the song in the control condition was higher than in the experimental condition, which can have affected the affective difference between groups: since the control song didn't talk about negative themes, and was familiar, the chance of experiencing more positive and less negative affects was higher. Future studies can use songs specifically developed for them as a form of naturally controlling familiarity, since over controlling variables in the data analysis process can skew its results (Bushman & Anderson, 2023).

On the other hand, the evaluation of music as self-deprecating mediated the relationship between manipulation and negative affects. These results are in line with Larwood and Dingle (2022), who highlight that, for sad music to impact emotions, the participant must see the content that way. Thus, future studies may, instead of presenting predetermined stimuli, evaluate participants who listened to a self-deprecating song of their choice. The General Learning Model can also help explain these results: Music activated knowledge structures, which impacted the evaluation of the stimuli as deprecating or not, and which consequently impacted negative affects (Buckley & Anderson, 2006).

Another interesting point was the fact that some participants in the control condition also perceived their music as deprecating to some degree, and vice versa. These results reflect the information that is brought by Sloboda and O'Neill (2001): the networks of meaning carried by the songs may differ for each individual, so that a seemingly "positive" song may reflect concerns that are beyond the superficial themes. The literature also points out that music can be an ambiguous stimulus, and its impact can be affected by individual variables (Thompson, 2009).

Conclusion

Finally, it is important to discuss the limitations of this study. The main issue, as discussed previously, was the complexity of finding a self-deprecating song in the Portuguese language. Another point that may have altered the results was the fact that the vast majority of participants were female and college students, as this was a convenience sample. Finally, since data collection occurred both individually and collectively, environmental control was not completely uniform among all participants. Thus, it is pertinent to carry out similar studies with larger samples and using different songs in the future.

However, the contributions made through this research also deserve to be highlighted: This is one of the few studies to address the impact of music on cognition and affect experimentally in the Brazilian context. The research is also an introductory step towards the construction of a more rigorous study about self-depreciation as a distinct phenomenon from self-esteem, since the results presented here show that the two constructs are displayed differently by the participants. Finally, it's important to point out that, until the present day, no study focused on experimentally studying the relationships between self-depreciation and music. Considering this fact, the present research provides a new insight on this topic, contributing to a better understanding of music impacts in our lives.

Thus, it is possible to draw some conclusions from the obtained results. Music, so common in our daily lives, is a double-edged sword: It can represent both universal and extremely specific aspects of society, it can bring well-being, but it can also lead to negative effects, even short-term ones. Therefore, future research should try to comprehend to what extent the impact of certain types of music can last, and what other factors may be related.

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