

Psychology of Aesthetics, Creativity, and the Arts

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Online First Publication, September 8, 2025. <https://dx.doi.org/10.1037/aca0000805>

CITATION

Ryff, C. D., Cha, S. E., Baker, A. W., & Song, J. (2025). Understanding links between race/ethnicity and health: Does participation in the musical arts matter? *Psychology of Aesthetics, Creativity, and the Arts*. Advance online publication. <https://dx.doi.org/10.1037/aca0000805>

Understanding Links Between Race/Ethnicity and Health: Does Participation in the Musical Arts Matter?

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The present study investigated different types of participation in the musical arts and linked them to self-rated mental and physical health. Of central interest was whether such participation mediated or moderated links between race/ethnicity and health. The work was conducted with a subsample ($N = 2,157$) of the Midlife in the United States Refresher study who completed a self-administered questionnaire about the arts in 2021–2022 (63.5% response rate). Assessments included various forms of active music engagement as well as receptive music appreciation. Overall, Black participants were more engaged in a variety of music and performance (singing, dancing, and creating) than White participants. Black participants also consumed (appreciated) more jazz, salsa, theatre, and dance than White participants. Hispanic participants showed generally similar patterns of music appreciation as Black participants. Mediation analyses showed that the higher active music engagement of Black compared to White individuals was linked with better mental and physical health. Higher receptive music appreciation was not a mediator of race differences in mental and physical health, and there was no support for moderation effects. Overall, the findings draw attention to race/ethnicity in considering how participation in the musical arts matters for health and underscore the need for more diverse measures of arts participation, along with quality assessments of mental and physical health tracked longitudinally.

Keywords: musical arts engagement and appreciation, racial disparities, mental and physical health

Considerable work has recently emerged on links between the arts and health, including a review of over 3,000 studies on positive implications of the arts, broadly defined (performing arts, visual arts, literature, culture, and online activities), for mental and physical health (Fancourt & Finn, 2019). Prior research has shown a socioeconomic gradient in arts participation (Bone et al., 2021). The targeted focus herein is on racial/ethnic differences in participation in the musical arts. The first section below reviews prior findings on who participates in the arts and whether assessments disproportionately include activities traditionally engaged in by White populations (Novak-Leonard et al., 2015). The second section reviews prior evidence on racial/ethnic disparities in health, thus underscoring the need to examine factors that may reduce such differences. Key aims of the study are then distilled—the specific focus is on participation in the musical arts and whether such activities mediate or moderate links between race/ethnicity and health (mental and physical).

Who Participates in the Arts?

Who engages in what kinds of art? Higher education and higher income have both been associated with more engagement in the arts (Bone et al., 2021; DiMaggio & Mukhtar, 2004; Fancourt & Finn, 2019), underscoring the strong social gradient in cultural engagement and arts participation and the idea of unevenly distributed cultural capital. A report from the Survey of Public Participation in the Arts (SPPA) between 1982 and 2008 found this gap to be widening (Welch & Kim, 2010): while education strongly predicted both arts participation and creation across time, income emerged as a stronger predictor in the later 2008 survey. Higher parental education and being female have also been associated with higher engagement with the arts, while poor health, low neighborhood safety, and living in less urban areas have been shown to be barriers to arts engagement (Bone et al., 2021; Fluharty et al., 2021).

Some work has found racial and ethnic differences in arts participation and engagement. In the SPPA report, individuals of White and European heritage attended many domains of art performances at higher rates than other racial/ethnic groups (Welch & Kim, 2010). Individuals of Black and African heritage showed lower participation than White individuals at musical plays, art fairs, historical parks, museums, and classical music performances. Regarding artistic creation, both Black and Hispanic participants were less likely than White participants to sew or weave, paint or sculpt, take artistic photographs, or make movies. Overall, the report underscored racial/ethnic disparities in arts participation and creation, though race and ethnicity were not strongly predictive after controlling for other factors, such as educational attainment or income (Welch & Kim, 2010). It is thus unclear whether race/ethnicity per se strongly

Thalia R. Goldstein served as action editor.

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Funding for recruitment of the MIDUS Refresher sample was provided by the National Institute on Aging (P01-AG020166, U19-AG051426). Funding for collection of the arts participation data was provided by the University of Wisconsin–Madison in a research grant to Carol D. Ryff.

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predicts engagement with the arts, because of the interconnected nature of race/ethnicity and socioeconomic factors tied to structural racism (Bone et al., 2021; Fluharty et al., 2021).

In considering higher arts participation among White than Black and Hispanic individuals, certain forms of “cultural engagement” (e.g., attending art galleries, theatre productions, dance performances, concerts, etc.) needs to be distinguished from arts engagement through “appreciation” (listening to recorded music or performances) or creation (playing music, singing, dancing, etc.). Racially/ethnically minoritized individuals may face greater obstacles in participating in arts events, including financial and transportation costs, or a lack of people to go with (Blume-Kohout et al., 2015). Lower attendance may also indicate less interest, possibly tied to a lack of cultural equity and relevance (Bone et al., 2021).

Most U.S. research has measured engagement using the “standard” arts activities presented in the SPPA, which include many forms of cultural engagement (Bone et al., 2021; Novak-Leonard et al., 2011). Some note a gap between these historically European American-centric metrics and how people actually engage in the arts (Bone et al., 2021; Novak-Leonard et al., 2015). The physical spaces in which such activities take place are also relevant, given that many venues, including museums, are spaces historically rooted in racism and colonialism, possibly posing barriers to People of Color.

Despite complexities in assessing participation in the arts, it is important to underscore that arts engagement and performance have been linked with multiple dimensions of subjective well-being (Fancourt & Finn, 2019; Hallam & Creech, 2016; Zarobe & Bungay, 2017) and better cognitive function (Balbag et al., 2014; Fancourt & Finn, 2019; Gooding et al., 2014; Kim & Yoo, 2019; Porat et al., 2017; Schneider et al., 2019). Specific arts interventions (including singing, group drumming, dancing, arts, and crafts) have also been linked with increases in both social and individual well-being (Ascenso et al., 2018; Daykin et al., 2018; Jones et al., 2013; Kaimal et al., 2017).

Racial/Ethnic Disparities in Health

Racial and ethnic disparities in health and well-being are well documented—such disparities are large, persistent, and may be increasing (Arias et al., 2021; Arispe et al., 2021; House & Williams, 2000). Individuals of Black and American Indian/Alaska Native (AIAN) heritage have shorter life expectancies compared to White individuals, are more likely to die from treatable conditions, during or after pregnancy, and lose children in infancy (Radley et al., 2021). Black and AIAN populations are also at higher risk for chronic health conditions such as diabetes and hypertension, and Black, Hispanic, and AIAN populations have less access to quality health care than White populations. These disparities were exacerbated by the COVID-19 pandemic, with People of Color experiencing even sharper declines in life expectancy (Gawthrop, 2023).

Research on mental health shows similar racial/ethnic disparities, likely tied to experiences of discrimination, prejudice, and stress for People of Color in the United States. Discrimination significantly predicts poorer mental health outcomes among marginalized groups and is associated with higher levels of depression and anxiety (Cuevas et al., 2021; Ren et al., 1999). Additionally, Black Americans experience higher levels of stress and lower levels of psychological well-being because of the cumulative effects of racism and socioeconomic disadvantages (Kessler et al., 1999; Williams

et al., 2019). The health and well-being benefits of higher socioeconomic status may also be greater for White individuals than People of Color. One study found that while education and income predicted future emotional well-being for White participants, it did not do so for Black participants (Assari et al., 2018).

Aims of the Present Study

Weaving the preceding literature together, the present study brings a targeted focus to racial/ethnic differences in participation in the musical arts and whether these activities mediate or moderate links between race/ethnicity and health (physical and mental). The overarching question is whether participation in the musical arts, examined in terms of active music engagement as well as receptive music appreciation, serves as an intervening pathway or protective buffer in understanding the links between race/ethnicity and health after accounting for other relevant factors. These questions are examined in the context of a national longitudinal study known as Midlife in the United States (MIDUS).

Method

Participants and Procedure

The current study was conducted with a subsample ($N = 2,444$) of U.S. adults who participated in an arts survey conducted in 2021–2022. These individuals were members of the MIDUS Refresher sample ($N = 4,084$) recruited in 2012–2014 to assess how diverse aspects of health and well-being are linked with sociodemographic factors and stress exposures (see <https://www.midus.wisc.edu>; Kirsch et al., 2019). Participants completed a self-administered questionnaire assessing their participation with the arts. The mortality-adjusted response rate for the ARTS Self-Administered Questionnaire (ARTS SAQ) data collection was 63.5%.

Predictors and relevant covariates were taken from the prior Refresher data collection, while the targeted focus on musical arts participation (active engagement and receptive appreciation) and health assessments were taken from the ARTS SAQ. The final analytic sample ($N = 2,157$) consisted of 1,778 non-Hispanic White, 269 non-Hispanic Black, and 110 Hispanic participants. Two hundred and eighty-seven respondents lacking race/ethnicity information as well as 271 respondents who self-identified as multiracial or other racial origins (e.g., Native Americans, Pacific Islanders, or Asians) were not included. Participants who responded to the ARTS SAQ were more likely to be older, female, have higher education, and married compared to nonrespondents. They also showed better physical and mental health, while no differences were evident in employment status.

Measures

The MIDUS arts survey was constructed based on prior inventories, including the National Endowment for the Arts SPPA (2017) as well as the arts module from the Health and Retirement Study (Rajan & Rajan, 2017). The content was extensive, including questions about reading (e.g., novels, short stories, poetry, biographies, memoirs, and history), writing (e.g., poetry, plays, and fiction), painting, drawing, photography, film, theatre, acting, and taking lessons (e.g., music, dance, and creative writing). As described below, the present inquiry

focused on only a subset of questions pertaining to music participation, covering both active engagement and receptive appreciation.

Active Music Engagement

Respondents' active engagement in music during the past 12 months was assessed with four questions pertaining to singing, dancing, playing musical instruments, and creating music. The wording was as follows: "During the last 12 months, how often did you do any [singing, dancing, play any musical instruments, create or perform any music in ways other than singing or playing an instrument]?" (1 = *never* to 3 = *3–11 times a year* to 5 = *at least once a week*). Responses to these four items were aggregated to make a single index of active music engagement.

Receptive Music Appreciation

Receptive music appreciation was measured with six items as follows: "Now think about performances you watched or listened to that were not live in-person. During the last 12 months, how often did you watch, view or listen to ..." The ending of each sentence was: (a) Latin, Spanish, or salsa music; (b) jazz music; (c) classical music or opera; (d) other kinds of music, such as rock, pop, country, folk, rap, or hip-hop; (e) theater productions, such as musicals or plays or information about theater; and (f) dance performances or programs or information about dance (1 = *never* to 3 = *3–11 times a year* to 5 = *at least once a week*). The questions explicitly asked participants to report their appreciation of music and performances that were not in person, using devices such as television, radio, and record/cassette/compact discs/digital versatile discs players. Specific items assessed the types of music consumed, such as jazz, salsa, and classical music to explore the differences in music appreciation. The six items were aggregated into a single index of receptive music appreciation.

Race/Ethnicity. Participants' race/ethnicity was ascertained by self-identification of racial origin(s) and Hispanic ancestry and

categorized into three categories in the analysis (1 = *non-Hispanic White* [NH White], 2 = *non-Hispanic Black* [NH Black], 3 = *Hispanic*). For succinctness, we refer to NH Whites as White participants, and NH Blacks as Black participants.

Physical and Mental Health. The ARTS SAQ asked participants to self-rate their physical health and mental health with a single item ("In general, at the present time, would you say your physical [mental or emotional] health is excellent, very good, good, fair, or poor?") using a 5-point Likert scale at baseline Refresher and Refresher ARTS SAQ. Responses were reverse coded so that higher scores indicated better health (1 = *poor* to 5 = *excellent*). Numerous studies have demonstrated the validity of single-item physical health assessment as a significant predictor of both morbidity and mortality (Idler & Benyamini, 1997; Lorem et al., 2020). Self-rated mental health is also a known predictor of mental health disorders (e.g., depression; Galambos et al., 2023) and has been associated with physical health problems, health service usage, and mental health service satisfaction (see Ahmad et al., 2014).

Covariates. Several variables previously associated with physical and mental health were included as controls. Demographic factors, such as age (in years), gender (0 = *male*, 1 = *female*), employment status (0 = *not employed*, 1 = *employed*), marital status (0 = *unmarried* [divorced/separated, widowed, never married], 1 = *married*), and education (in years), were included in all models as covariates. Prior studies have observed a greater risk of poor health among those who are older, unmarried, unemployed, and have less education (e.g., Bundy et al., 2023). In mediation and moderation analyses predicting mental and physical health outcomes, self-rated mental health and physical health measured at baseline were also controlled for. The measure was the same single-item assessment as the dependent variable ("In general, at the present time, would you say your physical [mental or emotional] health is excellent, very good, good, fair, or poor?") on a 5-point Likert scale. The scores were reverse coded so that higher scores indicated better health (1 = *poor* to 5 = *excellent*).

Table 1

Descriptives Across Racial/Ethnic Groups: Sociodemographic Characteristics, Arts Participation, and Health

Variable	MR1 SAQ (2012–2014), <i>M</i> (<i>SD</i>) or %				Group comparison
	Total	NH White (a)	NH Black (b)	Hispanic (c)	
Age	51.64 (13.86)	52.68 (13.97)	47.30 (11.82)	45.42 (13.09)	a > b, c
Education (years)	14.94 (2.55)	15.13 (2.53)	13.79 (2.45)	14.56 (2.46)	a > b, c
Baseline mental health	3.78 (0.97)	3.83 (0.94)	3.54 (1.06)	3.58 (1.01)	a > b, c
Baseline physical health	3.60 (1.05)	3.68 (1.01)	3.14 (1.14)	3.48 (1.13)	a > b
Sex (ref = male)	46.64%	48.93%	34.20%	40.00%	a > b
Marital status (ref = not married)	34.82%	29.36%	69.14%	37.27%	a > b
Employment (ref = not employed)	32.00%	31.16%	26.77%	21.82%	n.s.
Variable	ARTS SAQ (2021–2022), <i>M</i> (<i>SD</i>) or %				Group comparison
	Total	NH White (a)	NH Black (b)	Hispanic (c)	
Active music engagement	1.73 (0.80)	1.68 (0.76)	2.03 (0.91)	1.87 (0.98)	a < b, c
Receptive music appreciation	2.15 (0.71)	2.10 (0.66)	2.26 (0.87)	2.61 (0.85)	a < b, c
Mental health	3.48 (1.03)	3.51 (1.02)	3.37 (1.03)	3.30 (1.09)	a > b, c
Physical health	3.33 (1.00)	3.36 (1.00)	3.14 (0.93)	3.27 (1.12)	a > b

Note. MR1 SAQ = MIDUS Refresher Self-Administered Questionnaire; NH = non-Hispanic; Ref = reference. n.s. = nonsignificant; ARTS SAQ = ARTS Self-Administered Questionnaire.

Data Analytic Strategy

To examine whether participation in the musical arts varied by race, descriptive differences were first examined. Whether musical arts participation serves as an intervening pathway between race/ethnicity and health was examined with mediation analyses in which dummy-coded race/ethnicity served as the independent variable (White [reference], Black, and Hispanic), active music engagement or receptive music appreciation as the mediator, and self-rated physical health or mental health as the dependent variables. Covariates outlined above were included in all the mediation models. The two dependent variables (physical health and mental health) and the mediators (active music engagement and receptive music appreciation) were tested in separate models, resulting in four models. To test for the indirect model, 5,000 bootstrapping was performed to calculate 95% confidence intervals (CIs). Further analyses examined whether active music engagement or receptive music appreciation moderated the links between race/ethnicity and health (physical and mental).

Results

Tables 1 and 2 show descriptive statistics for variables in the analytic models, including the sample demographics. Overall, Black participants had lower mental and physical health in the baseline Refresher data compared to White or Hispanic ($r = -.09$, $p < .001$; $r = -.17$, $p < .001$, respectively) and also lower physical health in the ARTS SAQ (2021–2022; $r = -.07$, $p < .001$). Hispanic participants reported lower baseline mental health compared to White or Black participants ($r = -.05$, $p = .03$) but were not lower in other health indicators. Younger individuals ($r = -.12$, $p < .001$) and females ($r = .18$, $p < .001$) showed higher active music engagement. Those with higher educational attainment were more likely to appreciate music and performance ($r = .23$, $p < .001$) but were not significantly associated with engagement. Those who were employed showed higher engagement ($r = .06$, $p = .01$) and appreciation of music and performance ($r = .06$, $p = .01$). Marital status was not significantly associated with engagement or appreciation of music.

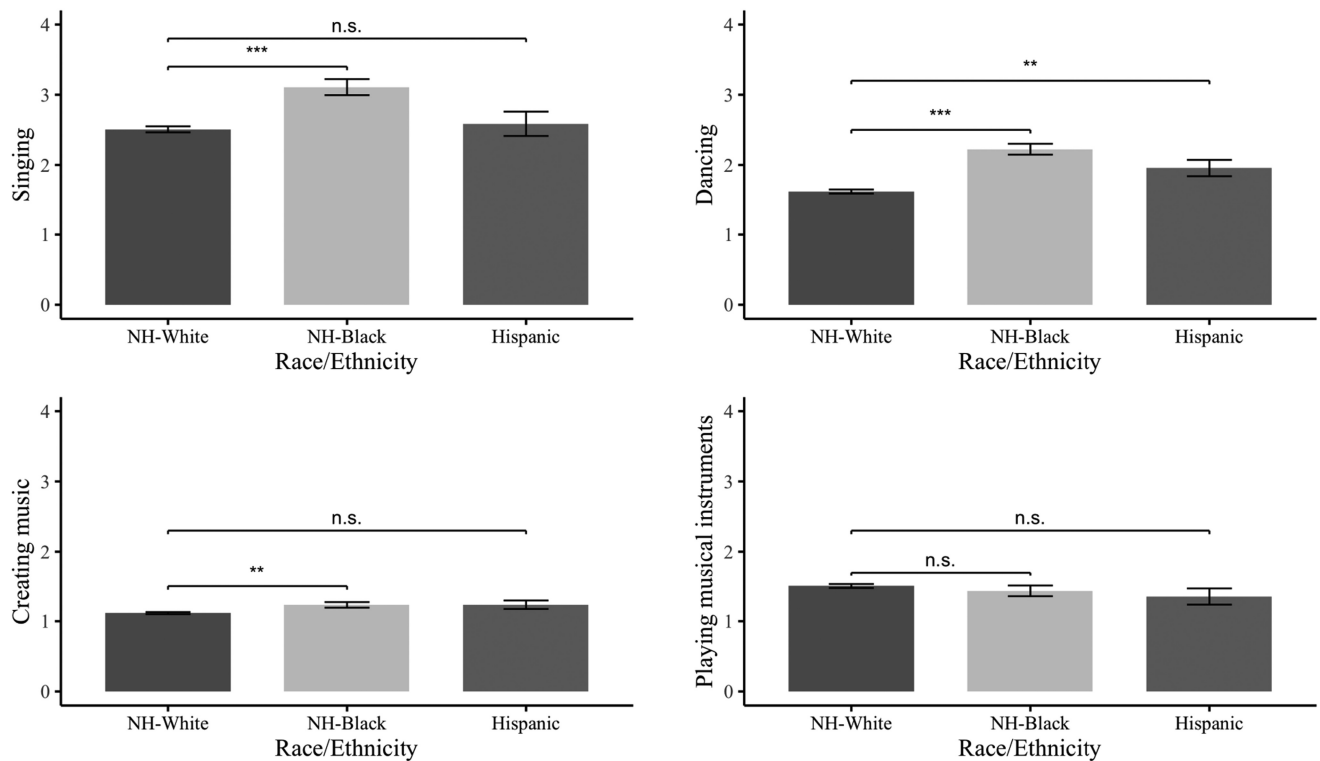
Race/Ethnicity Differences in Active Music Engagement

First, racial/ethnic differences in each item constituting active music engagement were examined. Multiple linear regressions were performed by regressing each subitem of active music engagement on demographic covariates and race/ethnicity. The results showed race/ethnicity differences in active music engagement (see Figure 1). Compared to White participants, Black participants were more likely to engage in singing ($b = 0.60$, $SE = 0.12$, $p < .001$), dancing ($b = 0.60$, $SE = 0.08$, $p < .001$), and creating music ($b = 0.12$, $SE = 0.04$, $p < .01$) but had no differences in playing instruments. Hispanic participants were more likely to engage in dancing compared to White participants ($b = 0.33$, $SE = 0.12$, $p < .01$), whereas singing, playing instruments, and creating music were comparable in the two groups. Overall, Black participants had higher active music engagement compared to their White counterparts ($b = 0.31$, $SE = 0.06$, $p < .001$), whereas Hispanic participants did not show significant differences from White participants ($b = 0.09$, $SE = 0.08$, $p = .25$).

Table 2
Bivariate Correlation of the Analytic Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
MRI SAQ														
1. Age	—	—	-.03	.01	-.45***	.00	-.05*	.16***	-.12***	-.10***	-.12***	-.04	.15***	-.02
2. Sex (ref = male)		—	-.06**	-.21***	-.08***	-.07**	-.03	-.10***	.09***	.03	.18***	.01	-.09***	-.06**
3. Education			—	.12***	.13***	.23***	.29***	.17***	-.17***	-.03	.04	.23***	.14***	.22***
4. Marital (ref = not married)				—	.04	.17***	.17***	.24***	-.27***	-.01	-.02	-.02	.11***	.18***
5. Employment (ref = employed)					—	.08***	.13***	-.04	.02	.04	.06*	.06**	.03	.10***
6. Mental health						—	.56***	.11***	-.09***	-.05*	.02	.06*	.34***	.32***
7. Physical health							—	.16***	-.17***	-.03	.03	.10***	.29***	.53***
8. NH-White								—	—	—	-.15***	-.14***	.06**	.07***
9. NH-Black									—	—	.14***	.06**	-.04	-.07***
10. Hispanic										—	.04	.15***	-.04	-.01
ARTS SAQ														
11. Engagement											—	.35***	.04	.09***
12. Appreciation												—	.05*	.10**
13. Mental health													—	.52***
14. Physical health														—

Note. Variables from 1 to 10 are from MRI SAQ, and variables from 11 to 14 are from ARTS SAQ. MRI SAQ = MIDUS Refresher Self-Administered Questionnaire; Ref = reference; NH = non-Hispanic; Engagement = active music engagement; Appreciation = receptive music appreciation; ARTS SAQ = ARTS Self-Administered Questionnaire.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 1*Race/Ethnicity Differences According to Active Music Engagement*

Note. NH = non-Hispanic; n.s. = nonsignificant.

** $p < .01$. *** $p < .001$.

Race/Ethnicity Differences in Receptive Music Appreciation

The race/ethnicity differences in each item constituting receptive music appreciation were also examined (see Figure 2). Black participants showed higher appreciation in most activities compared to White participants. They were more likely to watch/listen to jazz music ($b = 1.02$, $SE = 0.09$, $p < .001$), watch/listen to Latin/Spanish/Salsa music ($b = 0.36$, $SE = 0.07$, $p < .001$), watch/listen to theater productions ($b = 0.20$, $SE = 0.07$, $p < .01$), and watch/listen to dance performances/programs/information ($b = 0.39$, $SE = 0.07$, $p < .001$). However, Black participants were less likely to watch/listen to other kinds of music ($b = -0.46$, $SE = 0.09$, $p < .001$) and showed no differences in appreciating classical music/opera compared to White participants.

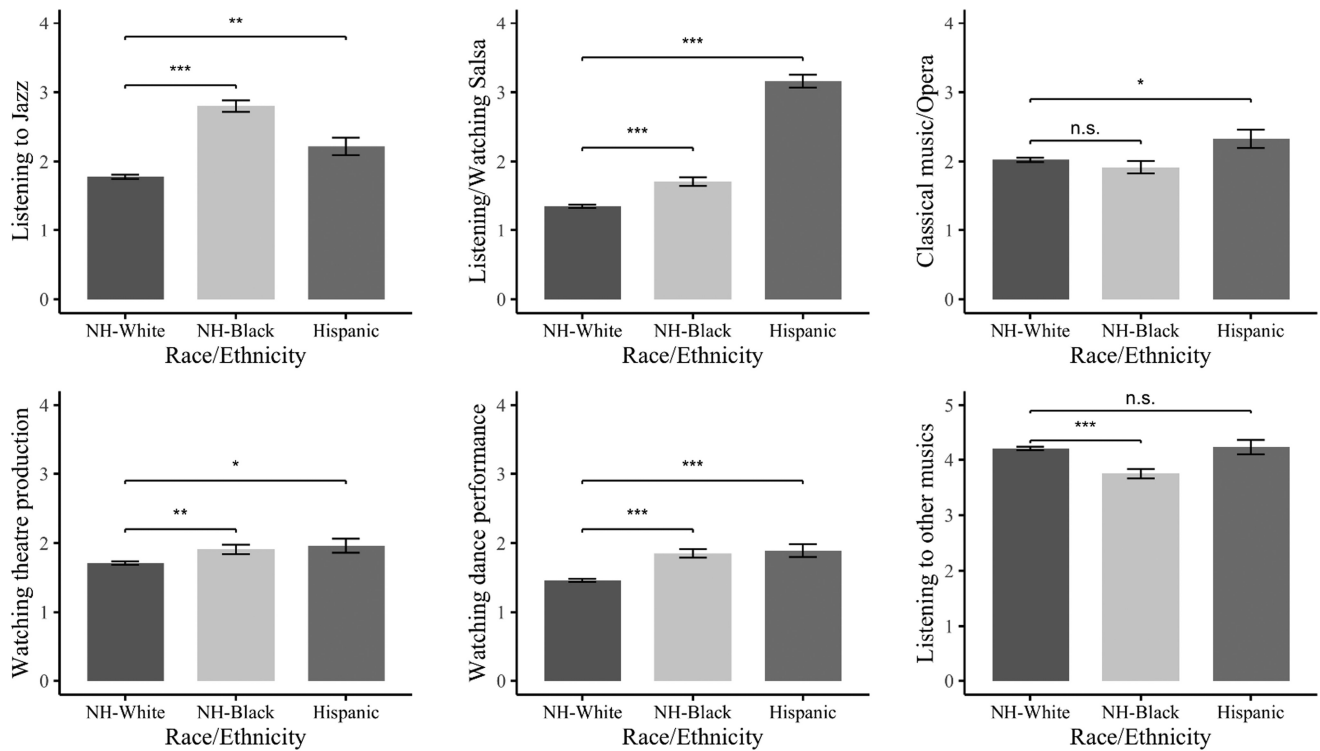
Hispanic participants showed similar patterns as Black participants—that is, higher appreciation of all of the activities except for watching/listening to other kinds of music. Hispanic participants were also more likely to engage watch/listen to jazz music ($b = 0.44$, $SE = 0.13$, $p < .01$), watch/listen to Latin/Spanish/Salsa music ($b = 1.80$, $SE = 0.10$, $p < .001$), watch/listen to classical music or opera ($b = 0.30$, $SE = 0.14$, $p = .03$), watch/listen to theater productions ($b = 0.25$, $SE = 0.10$, $p = .02$), and watch/listen to dance performances/programs ($b = 0.43$, $SE = 0.10$, $p < .001$) compared to White participants. Overall, both Black and Hispanic participants had a higher receptive music appreciation compared to

White participants ($b = 0.23$, $SE = 0.05$, $p < .001$; $b = 0.54$, $SE = 0.07$, $p < .001$, respectively).

Mediation Analyses

The second research question probed whether active music engagement mediated the link between race/ethnicity and self-rated mental or physical health (see Figure 3). Aligned with guiding ideas, active music engagement significantly mediated the link between race/ethnicity and self-rated mental health ($b = 0.02$, $SE = 0.01$, 95% CI = [.006, .046]). Specifically, Black individuals were more likely to engage in music compared to White ($b = 0.32$, $SE = 0.06$, $p < .001$), which, in turn, led to higher self-rated mental health ($b = 0.07$, $SE = 0.03$, $p = .01$). Conversely, Hispanic individuals showed a null indirect effect on self-rated mental health via active music engagement ($b = 0.01$, $SE = 0.01$, 95% CI = [−.007, .028]). We then examined whether active music engagement was related to self-rated physical health. Similar to mental health, there was a significant indirect effect of active music engagement on self-rated physical health for Black ($b = 0.03$, $SE = 0.01$, 95% CI = [.013, .054]) but not for Hispanic participants ($b = 0.01$, $SE = 0.01$, 95% CI = [−.009, .033]).

A second set of analyses examined whether receptive music appreciation mediated the association of race/ethnicity with self-rated mental and physical health (see Figure 4). The results indicated that receptive music appreciation was not a significant mediator of either self-rated mental health or physical health for both Black

Figure 2*Race/Ethnicity Differences According to Receptive Music Appreciation*

Note. NH = non-Hispanic; n.s. = nonsignificant.

* $p < .05$. ** $p < .01$. *** $p < .001$.

($b = 0.01$, $SE = 0.01$, 95% $CI = [-.007, .025]$; $b = 0.01$, $SE = 0.01$, 95% $CI = [-.000, .030]$) and Hispanic participants ($b = 0.02$, $SE = 0.02$, 95% $CI = [-.017, .056]$; $b = 0.03$, $SE = 0.02$, 95% $CI = [-.001, .065]$). Specifically, Black and Hispanic individuals had higher receptive music appreciation, but such appreciation did not predict self-rated mental and physical health.

Moderation Analyses

Whether active music engagement or receptive music appreciation moderated the relationship between race/ethnicity and health outcomes was examined. The key question was whether the physical or mental health benefits of active music engagement or receptive music appreciation differed across racial/ethnic groups. Results showed that neither mental nor physical health outcomes varied by race/ethnicity in relation to active music engagement (all $ps > .42$). Similarly, race/ethnicity was not associated with differences in mental or physical health outcomes based on receptive music appreciation (all $ps > .10$). The findings showed that the health benefits of music engagement do not differ among individuals of White, Black, or Hispanic heritage; rather, they yield comparable health effects regardless of one's race or ethnicity.

Caveats Related to the Data Collection Period

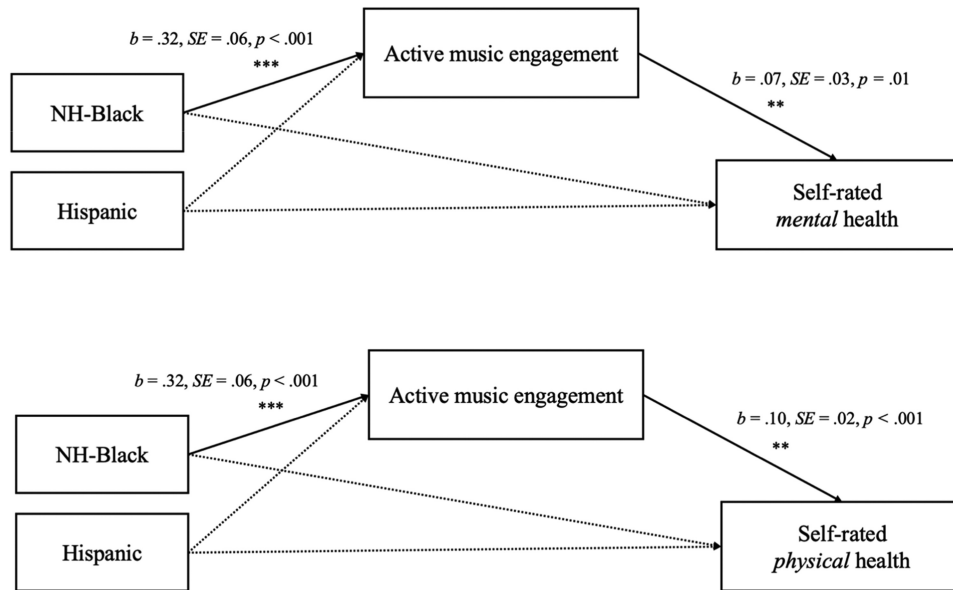
The ARTS SAQ was administered in 2021–2022, thus overlapping with the COVID-19 pandemic, which limited many activities

involving people gathering together. This contextual effect might have restrained some from engaging in the arts (Paulsen, 2022). We note, however, that the ARTS SAQ asked participants to report whether, compared to a typical year, they spent more, less, or about the same amount of time singing, making music, dancing, or acting. Results showed that White individuals reported about the same engagement as in prepandemic (64.22%), whereas Black (44.40%) and Hispanic (42.45%) individuals reported less engagement. Therefore, the results of the current study might reflect an underestimation of active music engagement and receptive music appreciation for Black and Hispanic individuals. That is, the higher engagement and appreciation in music and performance evident for Black and Hispanic participants in the current analyses might have been even higher were it not for the pandemic.

Discussion

Prior work has shown a strong socioeconomic gradient in arts participation, although comparatively little work has examined racial/ethnic differences in such participation. The present study first examined racial/ethnic differences in participation in the musical arts, formulated as active music engagement and receptive music appreciation. A further key objective was to bring participation in the musical arts to the topic of racial/ethnic disparities in health. The key question was whether the musical arts serve as an intervening pathway linking race/ethnicity to health (mediating effects) or afford protective buffers

Figure 3
Mediation Graphs for Active Music Engagement



Note. Reference for racial/ethnic groups was NH-White. All covariates were included in the models but were excluded for succinctness. The dotted line indicates nonsignificance, and the solid line indicates significance. NH = non-Hispanic.

** $p < .01$. *** $p < .001$.

against ill-health of marginalized populations (moderating effects). Key findings from the inquiry are distilled below, followed by the consideration of them vis-à-vis the prior literature.

Overall, Black participants were more likely to engage in singing, dancing, and creating or performing music than White participants, although the frequency of playing instruments was similar between the two groups. Hispanic participants were more engaged in dancing but not in other domains of music and performance. Regarding receptive music appreciation, Black participants also consumed more jazz, salsa, theater productions, and dance performances than White participants but were less likely to appreciate other kinds of music, such as country. Their consumption of classical music and operas was similar to that of White participants. Hispanic individuals were also more likely to listen to/watch jazz, salsa, classical music or operas, theatre productions, and dance performances but showed no differences in listening to other kinds of music.

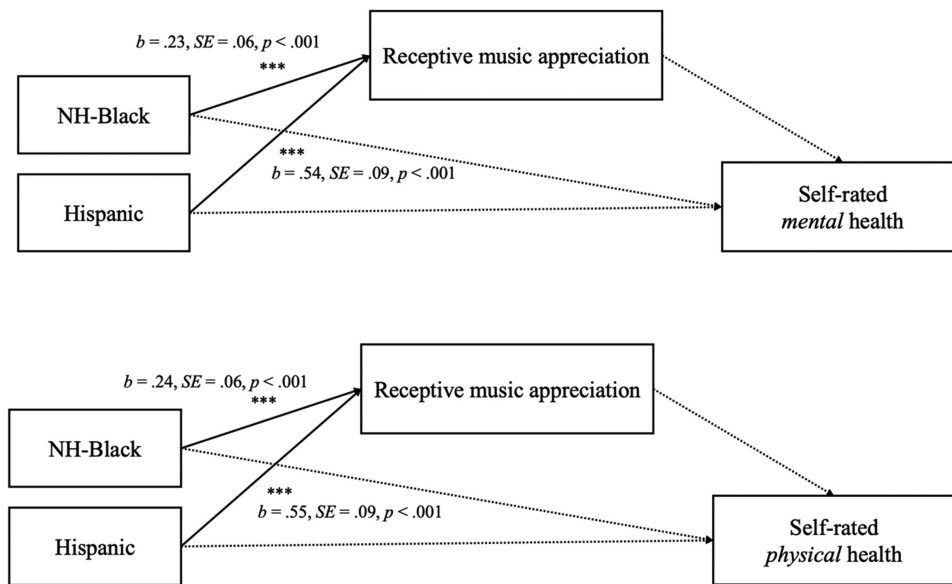
Mediation analyses then examined whether the above racial/ethnic differences in active music engagement or receptive music appreciation were intervening influences linking race/ethnicity to physical and mental health. Partial support was evident for Black participants, whose higher levels of active music engagement compared to White participants were associated with better mental/emotional health and physical health, respectively. No significant mediation was found regarding receptive music appreciation. Both Black and Hispanic individuals demonstrated a greater overall appreciation for music and performance, but such higher appreciation did not lead to higher mental or physical health for these individuals. Similarly, no support was evident that active music engagement or receptive music appreciates moderate links between race/ethnicity and physical and mental health.

Prior work has suggested that participation in the arts may be effective ways to reach marginalized groups to improve health outcomes (Fancourt & Finn, 2019). However, little work has, in fact, focused on people who are racially or ethnically minoritized (Daykin et al., 2013). The present findings are thus the first to show that the higher participation of Black compared to White participants in active music engagement was predictive of better mental and physical health. Such findings are notable, given the longstanding disadvantage in health endured by Black Americans (Arispe et al., 2021; Williams et al., 2019).

Though not predictive of health, the findings also showed greater receptive appreciation of numerous forms of music in both Black and Hispanic than White participants. Such findings deviate from previous work showing higher arts engagement and appreciation for White than for Black and Hispanic individuals (Bone et al., 2021; DiMaggio & Mukhtar, 2004; National Endowment for the Arts, 2019; Welch & Kim, 2010). Others have questioned whether race/ethnicity is a relevant predictor of arts participation after controlling for other relevant factors (Fluharty et al., 2021; Robinson, 1993; Seaman, 2006). The present analyses included multiple covariates (age, gender, education, employment status, and marital status) and nonetheless found race/ethnicity to be predictive of multiple outcomes.

Much prior research has measured participation in the arts using the standard SPPA that often involve specific locations, such as museums, opera houses, or theatres. Black and Hispanic individuals may be less motivated to go to places that are historically centered around White culture (Blume-Kohout et al., 2015; Bone et al., 2024). The present study thus included home-based metrics that may encompass a broader assessment of arts activities and thereby

Figure 4
Mediation Graphs for Receptive Music Appreciation



Note. Reference for racial/ethnic groups was NH-White. All covariates were included in the models but were excluded for succinctness. The dotted line indicates nonsignificance, and the solid line indicates significance. NH = non-Hispanic. *** $p < .001$.

illuminate the higher rates of participation in non-White individuals than observed in previous work.

At the same time, there are omissions in the current inquiry. Especially for Black individuals, various forms of music and performance (e.g., Gospels, blues, and hip-hop) have served as forms of storytelling, cultural heritage, and healing (Salaam, 1995). For example, krumping—a form of community-oriented African American dance popularized in the United States—was a means to escape from violence and gang life (Batiste, 2014). Other types of music and arts engagement—such as jazz, afrobeat, house dance, and swing dance—were largely originated and consumed by Black individuals. For people of Hispanic heritage, Salsa music also symbolizes shared cultural life and speaks to the adversities they encounter in the United States (Peña, 1993). For example, conjunto music, or *música norteña*, was a means of self-expression and shared culture for the Mexican working class in the United States. Major music consumed by Hispanic Americans was not only a form of entertainment but also served as a “musico-cultural refuge” for immigrants facing hostility and alienation in the United States (Peña, 1993). Despite differences in cultural heritage reflected in music and performances, generic metrics have been used to assess arts engagement (e.g., “listening to music”). Future work should strive to more accurately represent how different groups engage with the arts.

Other limitations of the current work need attention as well. The single-item measures for self-rated health, although known to be predictive of other outcomes (e.g., mortality; Lorem et al., 2020), need to be augmented with the more comprehensive mental and physical health assessments collected in the MIDUS longitudinal study. The second wave of the MIDUS Refresher study, currently in the field, will provide detailed measures of psychological well-being, positive/negative affect, cognitive functioning, and various objective

health indicators including biomarkers (stress hormones, inflammatory markers, and cardiovascular risk factors). Future work will thus allow for tracking whether longitudinal change in these outcomes is tied to differing forms of engagement in the arts, as assessed in the MIDUS arts survey.

While engagement in the arts may enhance health outcomes, it is also possible that good health increases involvement in and appreciation for the arts. Although pertinent covariates, including baseline health from the first wave of data collection, were controlled in the present analyses, future work examining arts engagement and health outcomes at different time periods will sharpen tests of implied causal inference (Granger, 1980). Alternatively, longitudinal inquiry also brings attrition bias into the inquiry. In MIDUS, younger, unmarried, male, and those with less education tend to drop out over time (Radler & Ryff, 2010; Song et al., 2021). Those who completed the ARTS questionnaire showed a similar pattern of attrition bias relative to the baseline Refresher sample. This means that observed findings underrepresent individuals from underserved socioeconomic backgrounds, which is concerning when health constitutes the key outcome of interest. Caveats must thus be considered in interpreting the findings.

Despite these limitations, this study represents a step forward in bringing race/ethnicity to who is participating in the musical arts and how such participation matters for physical and mental health. Findings conveyed that Black participants had higher levels of active music engagement than White participants and that such differences mediated links between race/ethnicity and physical and mental health. Further work with more culturally attuned assessments of arts participation is needed to explore ways in which these realms of life engagement may reduce inequalities in health.

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Received September 9, 2024

Revision received June 25, 2025

Accepted June 27, 2025 ■