Valence, Arousal, and Dominance in Hip-Hop Lyrics Across Time

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Abstract

Hip-Hop (HH) lyrics provide insight into the experiences of people of color. This study analyzed valence, arousal, and dominance levels in mainstream HH song lyrics from 1993–2022 to determine trends. A corpus of 450 songs was compiled and analyzed using sentiment analysis. Results showed medium overall valence, arousal, and dominance levels in HH lyrics. Valence and dominance decreased over time while arousal increased. The trends likely relate to factors such as commercialization, regional changes in HH, and societal shifts. The findings contradict stereotypes of HH as only negative. Clinically, familiarity with HH lyrics can enhance counselors' multicultural awareness, inform discussions about masculinity and vulnerability, and normalize mental health issues. This innovative linguistic analysis of mainstream HH lyrics provides a nuanced perspective of affective processes over time. Further qualitative research on sociocultural factors influencing themes in lyrics is recommended.

Keywords: Hip Hop, lyrics, diachronic, corpus linguistics, valence, arousal, and dominance

Introduction

Multicultural counseling is vital for the advancement of the counseling profession. It may be possible that counselors can utilize Hip-Hop (HH) music to connect with clients of color. HH was created in the Bronx in the 1970s as a reaction to New York City's social and economic changes. Frustrated by unemployment, poverty, and violence, young Black and Latino men and women developed HH culture to communicate their feelings. Today, more than 40% of children in the Bronx live in poverty, while 90% of the population in the Bronx identify as people of color. Today, HH is one of the world's most popular musical genres that often mirrors the lives, experiences, and worldviews of many people of color. HH lyrics may provide counselors with helpful knowledge to improve their social justice and multicultural competencies when working with clients of color.

There were two primary goals for the present study: gap-spotting and disruption of practice (Sandberg & Alvesson, 2010; Tadajewski & Hewer, 2011).

First, the study targeted gaps in the existing literature to develop knowledge about the neglected area (Sandberg & Alvesson, 2010). In terms of gap-spotting, there is a decent amount of published discourse related to the sentiment of popular music. In terms of the sentiment of music, popular music lyrics have, in general, tended to shift towards a negative tone (Christenson et al., 2019; DeWall et al., 2011; Napier & Shamir, 2018). Regarding the sentiment of HH lyrics, Susino and Schubert (2019) concluded that HH lyrics were significantly associated with negative emotions. The current study aimed to continue the discourse by testing the data on HH against the stereotype of negative tone in HH. The second goal of this study was to disrupt current clinical practice in counseling by offering insight into how HH lyrics can be used to identify best practices, specifically in the context of multicultural counseling competency. Kreyer (2016) stated that the purpose of HH lyrics is to help demonstrate an artist's authenticity and to show that they are "staying street."(p. 95). To obtain this image, one's lyrics must reflect the reality of contemporary urban inner-city life, which may be demonstrated through themes of drugs, sex, crime, law and order, warfare, weapons, and money. Counselors may improve their multicultural and social justice counseling competencies by better understanding the worldview and oppressive barriers often described in HH lyrics.

In a review of the literature on affective processes in HH lyrics, five themes emerged. These were (a) key terms, (b) what is known about valence in HH lyrics, (c) what is known about arousal in HH lyrics, (d) what is known about dominance in HH lyrics, and (e) what is known about changes in affective processes in HH lyrics over time. After these themes are addressed, the questions that guided the present study are detailed.

Three terms are salient to understanding research related to the sentiment of HH lyrics: HH, lyrics, and sentiment. Concerning the term *Hip-Hop*, Chang (2006) defined it as emceeing (i.e., rapping), DJing (i.e., turntablism), forms of dance such as breaking (i.e., breakdancing), and graffiti writing. In sum, HH is a culture and art movement (Chang, 2006). *Lyrics* are the words that make up a son and artists often utilize their lyrics to achieve linguistic realness, acquire street credibility, and/or connect with fans equally (Kreyer, 2016; Werner, 2019). In reference to the term *sentiment*, Mohammed (2021) said that it is an attitude toward a subject or topic. Furthermore, Mohammed clarified an attitude as "an evaluative judgment such as positive or negative, or an emotional or affectual attitude" (p. 1).

Valence represents the positive/negative dimension. In HH lyrics, there is a consensus that there are positive and negative rap songs (Henderson, 1996; Pressley, 1992; Rose, 1994). Positive rap generally refers to rap that strives for solutions and promotes self-defense concepts and techniques to motivate one to alter undesirable situations (e.g., improve people's spirits and raise their awareness). Rose (2008), on the other hand, claimed that much of the criticism of mainstream rap is negative, with the genre frequently vilified for portraying Black men as violent, sexually aggressive criminals. Lastly, McNair and Powles (2005) asserted that rap has transformed from political or conscious rap to a more controversial "gangsta" rap characterized by nihilism, sexism, and violence

(McNair & Powles, 2005). In sum, the research on valence in HH suggests that lyrics can express both positive and negative valence.

Arousal refers to the feeling of excitement or energy. According to Napier and Shamir (2018), the tone of popular music lyrics has changed significantly from 1951 to 2016, with expressions such as anger, disgust, fear, and sadness becoming more prominent. Compared to other music genres, HH lyrics evoke anger and disgust (Napier & Shamir, 2018; Susino & Schubert, 2019). According to Susino and Schubert's study on emotional stereotyping, HH lyrics are more likely to evoke high levels of arousal and negative feelings. The literature shows that arousal in rap lyrics has increased over time, and rap lyrics are more likely to evoke negative feelings.

Dominance refers to the dimension of control. According to Kreyer (2016), crime, drugs, firearms and the display of wealth and money play an important role in HH lyrics. It could be argued that the overrepresentation of the above categories serves to establish a certain image of the HH artist as an independent, successful, and wealthy individual involved in fighting and crime. Kreyer found that song lyrics in HH promote a "bad boy" image of the artist. Rose (2008) concluded that male HH artists are often seen as sexually aggressive, and women are portrayed as sexual objects or materialistic. Female HH musicians, like male rappers, often talk about sexual desire and escapades. Recently, there has been a transition in which female rappers continue to write songs that reflect the masculine savagery of the genre while portraying themselves as sexually desirable. Research on dominance in rap lyrics shows that both male and female artists use dominance as a means of demonstrating control (Moody-Ramirez & Scott, 2016).

Given the aforenoted, three research questions were designed for the present study. These questions were:

RQ1: What is the level of valence, arousal, and dominance in HH lyrics overall?

RQ2: By year, what are the levels of valence, arousal, and dominance in HH lyrics?

RQ3: In HH lyrics, how has valence, arousal and dominance changed over time?

Preregistration of these research questions can be found at https://osf.io/jfpqv

Method

Design

The study employed a sentiment analysis with a repeated cross-sectional design. The variables for this study included valence, arousal, dominance, and year. The level of measurement for valence, arousal, and dominance was continuous and for year was nominal. The unit of analysis was words. Given that the data were published lyrics, no human subject review was required.

G*Power 3.1 was used to conduct the power analysis for this study (Faul et al., 2009). RQ 3 involved diachronic inferential analyses. As such, a form of multiple regression was employed. The effect size (Cohen's f^2) for input was drawn from a study of digital music purchasing behaviors ($f^2 \geq .15$, Chai et al.,

2021). The input parameters were: (a) test family: F tests; (b) statistical test: linear multiple regression: fixed model, R2 deviation from zero; (c) type of power analysis: a priori: compute required sample size, given α, power, and effect size; (d) $f^2 = 0.18$; (e) $\alpha = .05$; (f) power (1-β err probability) = 0.80; and (g) number of predictors = 1. The G*Power 3.1 output included a sample size of 46 and an actual power of 0.80.

Corpus

Register, Scope, and Sources

The register for the study was HH song lyrics. The scope was limited to songs by HH artists. The decision of whether to include or exclude a song was not an easy one. The parameters for the song selections were that the songs needed to be released between 1993 and 2022. The songs also needed to be a top 40 single on the Billboard Hot 100 chart for at least one week. Billboard was chosen due to its reputation as the standard record chart to rank songs in the music industry. The source for the lyrics of the corpus was Google Music Lyrics and the online database Genius (www.genius.com). The corpus was composed of 450 songs released between 1993 and 2022.

Preprocessing

HH lyrics scraping can be challenging and tedious but necessary to ensure the lyrics are accurate and uncensored for the purpose of analysis. While most lyrics were sourced via automated scraping, some manual intervention was necessary. The HH lyrics scraping phase involved the following steps: (1) used Google as the primary source of lyrics and scraping the lyrics for all given songs; (2) if unable to source the lyrics from Google, the Genius API was used as the secondary means; (3) if unable to source the lyrics from the Genius API, manual collection was performed; and (4) collected lyrics and internal index mapping files created for next steps. During the initial quality assurance process, each of the scraped lyrics was inspected to validate the year and title, artist, and the language and content.

Cleaning the raw HH lyrics after scraping was performed to ensure high data quality for analysis. The following steps were applied: (1) data normalization and restructuring, (2) word tokenization, (3) deduplication to ensure a unique list of words, and (4) filtering unwanted characters and stop words. After the HH lyrics were cleaned and processed, a final quality assurance validation inspection was performed to ensure data quality. Specifically, a visual inspection of lyrics and tokens was performed.

Measures

Valence

Valence represents the positive/negative dimension of words. Words that are not strongly associated with positive or negative valence are considered neutral. An example of a positive valence word is “love,” an example of a negative word is “toxic,” and an example of a neutral word is “retreat.” Words can score a range from 0 (lowest valence) to 1 (highest valence).

Arousal

Arousal describes the level of excitement or energy of words. Words that are not strongly associated with positive or negative arousal are considered

neutral. An example of a positive arousal word is “running,” an example of a negative word is “napping,” and an example of a neutral word is “demonstrated.” Words can score a range from 0 (lowest arousal) to 1 (highest arousal).

Dominance

Dominance relates to the dimension of power and control. Words that are not strongly associated with positive or negative dominance are considered neutral. An example of a positive dominance word is “success,” an example of a negative word is “lazy,” and an example of a neutral word is “corrupt.” Words can score a range from 0 (lowest dominance) to 1 (highest dominance).

Year

Year is the unit of time in which songs were released. In this study, a time frame of 30 years was analyzed.

Apparatus

For this analysis, two main programs were utilized, TidyText and the NRC-VAD lexicon. TidyText is a text analysis software that can do several text mining functions (Silge & Robin- son, 2017). In this study, the NRC-VAD lexicon was used with TidyText to conduct sentiment analysis to examine valence, arousal, and dominance (Mohammad, 2018). The lexicon was synthesized by crowd-sourcing annotations of emotional associations with words. The lexicon provides broader analysis than most existing lexicons, and the use of best-worst scaling in the VAD Lexicon has demonstrated more reliable annotations than those obtained using rating scales (Mohammad, 2018). The VAD Lexicon contains scores for 20,000 words for the dimensions of valence, arousal, and dominance. The scores range from 0 to 1 along each of the VAD dimensions.

Data Analysis

In this study, a robust data analysis framework was employed to investigate the sentiments of HH lyrics over three decades (1993-2022). The NRC-VAD lexicon was used to measure valence, arousal, and dominance (VAD) levels of HH songs. Initially, the analysis began with data preparation involving scraping, cleaning, and tokenization of 450 HH songs. For RQ1, assessing overall levels of VAD in HH lyrics, we merged the cleaned lyrical data with the NRC-VAD Lexicon and used the Jaro-Winkler Algorithm (Wang et al., 2017) for imputing VAD scores for lexically absent words, followed by bootstrapping (Efron & Tibshirani, 1994) to aggregate VAD estimates for each song.

RQ2 explores the annual levels of valence, arousal, and dominance in HH lyrics from 1993 to 2022. We first began by aggregating VAD scores for each year within the dataset. This meant computing the mean valence, arousal, and dominance scores for the songs released each year. The aggregation process required summing the VAD scores of all songs per year and dividing by the number of songs to get the annual mean VAD scores. Following the aggregation, descriptive statistical methods were applied to summarize the yearly VAD data. The focus was primarily on calculating the mean VAD scores which represent the average sentiment levels for each year. In addition to means, standard deviations were computed to assess the variability of VAD scores around the mean each year.

To address RQ3, focusing on the changes in VAD scores over time, we conducted a panel regression analysis. This method is suited for data that spans across time and allows for the examination of how variables evolve. We modeled the VAD scores as dependent variables, with time (year) as the independent variable, and employed both linear and polynomial regressions to capture potential non-linear trends. Our first model assumed a linear relationship between time and VAD scores, hypothesizing that changes in the sentiments expressed in HH lyrics were directly correlated with the progression of time. To account for potential non-linear trends in VAD scores over time, we also fitted a polynomial regression model. This model allowed for the exploration of more nuanced relationships between time and VAD scores, including periods of increase, stability, or decrease in emotional expressions within the HH lyrics. In evaluating the fit of the linear and polynomial regression models to the data on VAD scores in Hip-Hop (HH) lyrics from 1993 to 2022, the analysis focused on the statistical significance of the model's coefficients and their explanatory power, as evidenced by R-squared and adjusted R-squared values. Coefficients with p-values less than 0.05 were deemed statistically significant, indicating a reliable relationship between the passage of time (and its squared term for the polynomial model) and the VAD scores. The selection between the linear and polynomial models was based on which model provided a more meaningful and less complex explanation of the data patterns. Specifically, the R-squared values, which quantify the proportion of variance in VAD scores explained by the year (and year squared for the polynomial model), played a critical role in this determination. Higher R-squared values suggested a better fit to the observed data, guiding the preference for one model over the other, provided the statistical significance of coefficients was also upheld.

Results

Regarding RQ1, the results indicate that the overall valence, arousal, and dominance scores were 0.561, 0.480, and 0.482, respectively. Regarding RQ2, the valence, arousal, and dominance levels in HH Lyrics by year varied. For valence, the highest year was 1995 (0.583) and the lowest year was 2000 (0.532). For arousal, the highest year was 2014 (0.505) and the lowest year was 1993 (0.479). For dominance, the highest year was 1995 (0.501) and the lowest year was 2000 (0.470). Complete results can be inspected in Table 1. RQ3 aimed to identify the longitudinal trends in the VAD scores of HH lyrics over the three decades from 1993 to 2022. To investigate these trends, we employed linear and polynomial panel regression analyses, which allowed us to model the yearly changes in VAD scores. The linear model tested for straightforward, directional changes over time, while the polynomial model allowed for the exploration of more complex, non-linear dynamics. Selection between models was based on their explanatory power, as indicated by R-squared values, and the statistical significance of their coefficients. Based on the outputs of the respective regressions, dominance has decreased linearly over time based on statistical significance ($\beta = -0.0004$, $p < 0.05$). See Table 2 for complete results for the linear model. In contrast, valence and arousal levels are better explained via the second regression model where

time is modeled as a polynomial trend. Due to statistical significance for valence and arousal as illustrated in the polynomial model framework, it represents a model for understanding the results for these two variables. It seems that the valence levels have increased and then decreased over time ($\beta = .242$, $p < 0.05$) with an inflection point in 2006, whereas arousal levels have decreased and then increased over time ($\beta = -1.78$, $p < 0.05$) with an inflection point in 2005. The results from the polynomial model can be inspected in Table 3. It is important to note, in our regression analysis, we observed low R-squared values across our models. Specifically, the R-squared values for our linear regression models were 0.001 for valence, 0.003 for arousal, and 0.022 for dominance, and the polynomial regression models R-squared values were 0.012 for Valence, 0.013 for arousal, and 0.022 for dominance.

Discussion

The RQs aimed to examine the sentiments in HH lyrics over time. Since the descriptive results are embedded in the inferential findings, the three RQs will be addressed together in terms of each of the variable sets of (a) valence, (b) arousal, and (c) dominance.

Valence (RQ1a, RQ2a, and RQ3a)

There are two possible reasons for the medium overall valence level in the corpus. One factor contributing to the medium valence levels of HH lyrics could be the rise of conscious and positive HH. HH lyrics often highlight positive messages, encourage self-reflection, and offer social commentary, promoting social justice principles and inspiring corresponding activism (Delgado & Staples, 2008; Lightstone, 2012; Prier & Beachum, 2008). The lyrics in HH may provide commentary on different societal issues in a neutral way. For example, lyrics criticizing police injustice may sound angry, but these lyrics may be neutral from a broader perspective. Storytelling concentrates on sharing narrative events and their consequences rather than focusing solely on value judgments of those events. The impartiality of the storytelling helps balance out any violent themes in the artists' stories. An alternative explanation for the medium overall valence level in HH lyrics could be attributed to the expectation of authenticity from HH artists. The purpose of such lyrics is to demonstrate an artist's connection to the streets and prove their authenticity (Kreyer, 2016). However, if the lyrics seem overly positive, they may not be perceived as authentic, leading to doubts about the artist's credibility. Conversely, excessively negative lyrics may limit an artist's commercial success. Therefore, HH artists may choose to write neutrally valanced lyrics to showcase their authenticity genuinely.

Between the latter and the former, the former is most likely. HH culture often associates being Black with authenticity because of the history of Black artists in the genre (Nguyen & Anthony, 2014). The narrative surrounding Black culture often follows a familiar pattern of overcoming adversity for which struggles and successes are used to establish credibility and authenticity (Ferraro, 2017). HH artists maintain a balanced valence level in their lyrics to demonstrate authenticity and credibility.

There are two possible reasons for the trends in valence levels in the corpus. One factor contributing to HH lyrics' valence levels increasing from 1993–2006 and decreasing from 2006–2022 could be the transition from the "bling" to the "blog" eras of HH. HH's "bling era" spanned from 1999–2006 ("Celebrate 50 Years," 2023) and is characterized by the increased commercialization of HH, with rap lyrics focusing on wealth, materialism, and success (Payne & Gibson, 2009). As the internet became more accessible, HH transitioned into the "blog era," characterized by the decline in brick-and-mortar record label sales and the emergence of digital outlets ("Celebrate 50 Years," 2023). Seip (2023) defined the blog era of HH as a movement in HH from 2007–2012 in which individuals rather than corporate conglomerates determined HH artists' success. As the internet removed traditional barriers in the music industry, the commercial influence declined throughout the blog era. This declining commercial influence had a profound impact on the sentiment of HH lyrics. Specifically, the positive valanced themes in the bling era peaked and declined with the emergence of the blog era. An alternative explanation for the trends in valence levels in HH lyrics is the increasing acceptance of discourse on mental health issues. The early HH artists' lyrics engaged in subjects such as depression, substance use, violence, and Black suffering (Harper & Jackson, 2018). Compared to early pioneers, present-day HH artists have shifted from covertly discussing mental health to overtly expressing it in their music lyrics (Harper & Jackson, 2018).

Between the former and the latter, the latter is most likely due to the general acceptance of mental health discourse. HH lyrics are linked to the Black experience and, in this discussion, Black male mental health. Historically, Black men were discouraged from expressing emotions and disclosing mental health issues (Harper & Jackson, 2018). As mental health topics have become more acceptable, contemporary HH artists have made more references to mental health. This point is supported by Kresovich et al.'s (2021) content analysis findings that suggest that mental health struggles have increased significantly in popular rap music from 1998 to 2018. The increased disclosure of mental health in HH lyrics likely contributed to decreased valence since 2006.

Arousal (RQ1b, RQ2b, and RQ3b)

There are two possible reasons for the medium overall arousal level in the corpus. One factor contributing to the medium arousal levels in HH lyrics is the commercialization of HH. HH music originated among marginalized inner-city youth, but over the years HH culture has become "a multi-billion-dollar industry" (Taylor & Taylor, 2004, p. 251). Considering HH's commercialization and mainstream popularity, it could be beneficial for artists to utilize a moderate level of arousal. Lyrics that are highly arousing tend to have provocative language and controversial themes that may appeal to some hardcore fans but may not be suitable for those with more mainstream tastes. When artists aim for moderate arousal levels, they can still convey passion while minimizing the most polarizing elements that could restrict a song's appeal to a broader audience. This broader appeal can help artists achieve commercial success with a wider range of listeners. Another possible explanation for why the overall arousal level is

medium could be due to the attention given to mental health in HH lyrics. Recent research has demonstrated that mental health discussions have become more prevalent in popular rap music in the United States over the last 20 years (Kresovich et al., 2021). The inclusion of lyrics about mental health issues may contribute to a decrease in overall arousal levels. On the other hand, lyrics that offer coping strategies could increase arousal levels, ultimately resulting in a moderate level of arousal.

Between the latter and the former, the former is most likely because while lyrics exploring mental health disclosure may contribute to balanced arousal, it is more likely in this research that the commercialization of HH explains the overall medium levels of arousal. It should be noted that the lyric selection process for this study (i.e., top mainstream HH songs chosen from Billboard 100) accentuated a commercialization influence. In sum, it is most probable that commodification influenced produced the obtained results.

There are two possible reasons for the trends in arousal levels in the corpus. One factor contributing to HH lyrics' arousal levels decreasing from 1993–2006 and increasing from 2006–2022 was the blog era of HH. Specifically, HH artists attracted the approval of individual fans rather than the powerful record labels that emphasized profit. The culture of the HH blog era may have contributed to the increased arousal in lyrics. As artists no longer were subject to gatekeeping from record labels, HH artists possibly returned to gritty, raw, and highly aroused lyrics appreciated by individual fans. An alternative explanation for the trends in arousal levels in HH lyrics is the shift in the regional hubs of HH. East and west coast HH artists monopolized the HH industry in the 1980s and early 1990s (Grem, 2006). In the mid-1990s, southern HH styles emerged, possibly due to the iconic void left by the deaths of Tupac Shakur and the Notorious B.I.G. Another possibility for the emergence of southern HH was the saturation of east and west coast artists in the industry that often led to unoriginal and recycled music (Grem, 2006).

Between the former and the latter, the latter is most likely due to the shifts in regional HH. After the gang-related homicides of Tupac Shakur and the Notorious B.I.G. in the mid-1990s, the arousal in HH lyrics likely continued to decline due to the pressures of media scrutiny. By the late 1990s, southern HH emerged as a powerhouse in the HH landscape. From the end of the 1990s to 2002, southern HH artists' market share in HH shifted from 30% to 60% (Sarig, 2007). Compared to east coast HH, which focuses on complex lyrics, southern HH is described as catchy party music that gets people dancing (Westhoff, 2011). It is likely that after the deaths of Tupac Shakur and Notorious B.I.G, arousal in east and west coast HH lyrics declined. As this decline occurred, the emergence of southern HH in the mid-2000s likely led to an increase in arousal in HH lyrics.

Dominance (RQ1c, RQ2c, and RQ3c)

There are two possible reasons for the medium overall dominance levels in the corpus. One factor contributing to the medium dominance levels in HH lyrics is the complex portrayal of women in mainstream HH lyrics. It has been argued that HH's music often promotes misogyny, sexism, homophobia, and hypermasculinity (Belle, 2014). The results of Tyree's (2009) study revealed that

Black male rappers differed in their perception of Black mothers and how they portrayed them as either positive or negative characters. A typical description of a biological mother given by rappers is that she is comforting, trustworthy, supportive, understanding, and compassionate. However, they often describe their "baby mamas" as promiscuous, disreputable, scandalous, cold-hearted, vengeful, and lazy. It can be concluded that the complex portrayal of women in HH lyrics may potentially influence the overall dominance of HH lyrics. An alternative explanation for the medium overall dominance level in HH lyrics is the portrayal of Black masculinity. Stereotypes that surround heterosexual Black men often portray them as poor, hypermasculine, and threatening. Many rappers have contributed to the development of a particular conception of Black male identity, which associates masculinity with traits such as unyielding toughness, invincibility, violent, and dominant (Anderson, 1990, 1999; Collins, 2005; Majors & Billson, 1992; Neal, 2006). In Oware's (2011) analysis of rap lyrics, the commonly held hypermasculine stereotype is challenged as rappers demonstrate themes of affection towards their friends by considering them as family, expressing their willingness to share their success with loved ones, and displaying sorrow at their friend's imprisonment or death. These themes highlight the vulnerabilities and complex nature of Black masculinity. These themes of complex masculinity in HH lyrics may influence the overall level of dominance in HH lyrics.

Between the latter and the former, the latter is most likely because of the complexities and layered nuances of Black masculinity (Oware, 2011). It cannot be refuted that themes of misogyny, sexism, and violence are present in HH lyrics. Rudrow (2019) examined the representations of vulnerability in HH lyrics and argued that Black men use HH to organize ideas about Black maleness around vulnerability. Although HH artists utilize highly dominant lyrics demonstrating themes of misogyny, sexism, aggression, and violence, they also display emotional vulnerability in their lyrics, demonstrating their humanity. These contrasting themes may contribute to the overall medium level of dominance.

There are two possible reasons for the trends in dominance levels in the corpus. One factor contributing to the decrease in the dominance levels of HH lyrics from 1993 to 2022 is the evolution and maturity of HH artists to challenge normative Black masculinity. The overly sexual, hypermasculine, angry, and aggressive themes are characteristics of the successful gangsta rapper in the 1990s. These characteristics are reflected in HH lyrics with themes of hypermasculinity, misogyny, and homophobia (Oware, 2011). However, Máthé (2019) argued that the popular gangsta attitude of many mainstream HH artists has declined. The evolution of HH artists may likely contribute to the trend in dominance levels of HH lyrics decreasing. An alternative explanation for the trends in dominance levels in HH lyrics is the acceptance of mental health references in HH lyrics. Harper and Jackson (2018) argued that HH artists avoided referencing mental health due to the perception of appearing weak. It is likely that as mental health has become more accepted in society, artists have

expressed more themes of vulnerability in their lyrics, contributing to the decline of dominance levels in HH lyrics.

Between the former and the latter, the former most likely contributes to the declining dominance levels in HH lyrics. Although there may be evidence that the acceptance of mental health has contributed to the levels of dominance decreasing over time, it is likely not the sole reason since most songs do not include these references. The evolution of HH artists since the 1990s has likely influenced the trend of decreasing dominance levels in HH lyrics. Máthé (2019) depicted this evolution, highlighting prominent rapper Jay-Z's lyrics shifting from bravado and hypermasculine in the 1990s to introspective and vulnerable lyrics later in his career. Lastly, Máthé argued that younger generation rappers are challenging the old stereotypes of Black masculinity through lyrics that express themes of vulnerability, grief, confusion, and doubt. Oware (2011) emphasized this point stating that Black HH artists possess a diverse range of emotions despite the common stereotypes surrounding Black masculinity. It is likely that as 1990s HH artists evolved, they changed HH through the expression of less dominantly focused lyrics. This shift likely influenced newer cohorts of HH artists to continue to challenge stereotypes of Black masculinity, which resulted in the decline of dominance levels in HH lyrics.

Limitations

There are four primary limitations in this study. First, the study relied on Billboard chart rankings to determine song selection. This is a limitation because the Billboard chart rankings potentially bias the sample selection toward commercially successful HH songs. It is possible that commercially successful HH songs may share similar patterns of sentiment and significantly differ from those that are not commercially successful. Including a diverse range of mainstream and nonmainstream HH songs may have strengthened the study's findings. The second limitation of this study is that it did not account for the demographic factors of HH artists, such as gender, race, age, and geographic regions. Although most HH artists are Black men, there may be differences in the sentiment of HH songs amongst women and other racial and ethnic groups. It is possible that incorporating demographic factors into the selection of HH artists may strengthen the results. The third limitation of this study is that the study utilized the NRC-VAD lexicon. Although the NRC-VAD lexicon provides a systematic and comprehensive way to analyze sentiment, there may be limitations related to the nuances of HH lyrics. Developing a HH-specific lexicon that contains the nuances of HH lyrics may enhance the results of this study. Overall, these three limitations may provide direction for future studies. It is imperative that these limitations are considered when interpreting the results. Our final limitation concerns model limitation. The regression models demonstrated low R-squared values, indicating that the variable of time (year) explains a small portion of the variance in the VAD scores. This suggests that additional factors influencing the sentiments of HH lyrics were not captured in our model. One possible reason for this was the omission of important variables that may influence VAD scores in HH lyrics. Our model only included time (year) as a predictor, which may not capture all the relevant factors.

Implications

There are three primary implications for future research. First, future research should incorporate additional variables that capture the complexity of HH lyrics more comprehensively. By including sociocultural factors such as historical events, economic conditions, and political movements, we can provide context to the changes in sentiments over time, potentially increasing the explanatory power of our models. Second, future research should consider using advanced text analysis techniques like topic modeling to uncover hidden topical patterns within the lyrics. These discoveries may lead to additional predictors that better capture the richness and complexity of the lyrical content. Lastly, incorporating demographic variables such as the artist's gender and geographic regions can further enhance the models by explaining differences in lyrical sentiment influenced by these factors. By integrating these approaches, future studies can develop more nuanced models that account for a greater portion of the variance in VAD scores, ultimately improving the R-squared values and providing a more robust explanatory framework for the emotional content of HH lyrics.

There are three primary implications for counseling practice. The first implication is that familiarity with the messages in HH lyrics may increase the counselor's awareness of client issues. Specifically, understanding themes in HH may help clinicians connect with their client's worldviews. Through enhancing self-awareness, counselors may provide more empathy and compassion to clients. The second implication is that counselors can analyze vulnerable themes in HH lyrics to assist clients in embracing norms of healthy masculinity. In HH lyrics, the increasing themes of vulnerability contrast with rigid societal expectations of toxic masculinity to which men, particularly young men of color, are exposed. By unpacking emotions and vulnerability in HH lyrics, counselors can create a space where healthy masculinity is reinforced over toxic masculinity. For instance, utilizing lyrics that express confronting emotions instead of performing normative masculine acts of bravado, stoicism, and emotional restriction may help challenge toxic masculinity norms. Lastly, counselors can utilize HH lyrics to bridge discussions around mental health stigma and promote help-seeking behaviors. Utilizing HH lyrics that address mental health and suicidal ideation can normalize mental health struggles and promote help-seeking behaviors. Counselors can utilize HH lyrics to enhance their self-awareness, improve multicultural competence, address issues related to masculinity by promoting vulnerability, and normalize mental health struggles for their clients.

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Table 1

Rates by Year (RQ2)

Year	Valence	Arousal	Dominance
1993	0.546	0.478	0.479
1994	0.559	0.474	0.481
1995	0.583	0.482	0.501
1996	0.565	0.484	0.490
1997	0.549	0.483	0.489
1998	0.561	0.477	0.493
1999	0.556	0.490	0.484
2000	0.532	0.488	0.470
2001	0.559	0.479	0.486
2002	0.560	0.474	0.477
2003	0.571	0.478	0.485
2004	0.564	0.470	0.473
2005	0.567	0.470	0.476
2006	0.573	0.475	0.489
2007	0.579	0.471	0.488
2008	0.575	0.470	0.475
2009	0.573	0.460	0.478
2010	0.573	0.480	0.486
2011	0.571	0.482	0.492
2012	0.558	0.486	0.472
2013	0.556	0.482	0.477
2014	0.533	0.505	0.484
2015	0.567	0.469	0.476
2016	0.567	0.473	0.484
2017	0.549	0.489	0.477
2018	0.555	0.485	0.474
2019	0.564	0.484	0.476
2020	0.550	0.487	0.468
2021	0.572	0.484	0.485
2022	0.542	0.485	0.477

Table 2

Linear Regression Model for VAD Scores (RQ3)

	Dependent variable:		
	Valence	Arousal	Dominance
	(1)	(2)	(3)
Year	-0.0001	0.0002	-0.0004**
	(0.0001)	(0.0002)	(0.0001)
Constant	0.838*	0.076	1.301**
	(0.424)	(0.328)	(0.258)
Observations	450	450	450
R^2	0.001	0.003	0.022
Adjusted R^2	-0.001	0.001	0.020
Residual Std. Error (df = 448)	0.039	0.030	0.024
F Statistic (df = 1;448)	0.427	1.512	10.060**

Note: *p<0.05; ** p<0.01

Table 3

Polynomial Regression Model for VAD Scores (RQ3)

	Dependent variable:		
	Valence	Arousal	Dominance
	(1)	(2)	(3)
Year	0.242*	-0.178*	0.021
	(0.109)	(0.085)	(0.067)
Year Squared	-0.0001*	0.00004*	0.00001
	(0.00003)	(0.00002)	(0.00002)
Constant	-241.878*	178.921*	21.609
	(109.682)	(84.855)	(67.170)
Observations	450	450	450
R^2	0.012	0.013	0.022
Adjusted R^2	0.007	0.009	0.018
Residual Std. Error (df = 447)	0.039	0.030	0.024
F Statistic (df = 2;447)	2.664	2.983	5.065*

Note: *p<0.05; ** p<0.01