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Statement of Purpose

The New York University Integrative Psychology Review is a publication seeking to help students across all disciplines work together under the umbrella of psychology by providing a peer-reviewed platform that fosters a collaborative learning environment. Psychology is an incredibly interdisciplinary field, and we believe that it deserves a forum that exemplifies this diversity.

NYU IPR aims to empower undergraduate students of all disciplines and fields to engage in both empirical research and literature review and facilitate discussion and inquiry within the domain of psychology. We believe that creating a strong foundational framework of research literacy and collaboration across multiple disciplines and fields of study at an undergraduate level is critical to foster a truly comprehensive understanding of psychology and its applications for future generations of researchers and academics.

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Preface

Welcome to the 4th issue of the NYU IPR!

This journal follows a long and prized convention of communicating thoughts, findings, and theories within (and, hopefully,) beyond the “nooks and crannies” of academia. For many there is a sense that information seeks to be found and shared. This need to convert question marks to periods (or the occasional exclamation point) is central to science. As the impressive productivity of the labs here at NYU attests, the focus on gathering and passing along knowledge is an essential perspective of the field of psychology.

The NYU IPR continues this tradition, providing a stage for the newest ideas, voices and perspectives. Hopefully, you will be challenged, intrigued and inspired.

Enjoy!

Andy Hilford

Associate Director of Graduate and Undergraduate Studies, Psychology

New York University

Note from the Co-Editors-In-Chief

Dear readers,

We are proud to present our fourth issue of the New York University Integrative Psychology Review. This Spring 2023 edition (Volume 2, Edition 2) reflects months of hard work from authors, our editorial team, and mentors throughout the past year.

We are very pleased to have the opportunity to publish our first review as the newly appointed Co-Editors-in-Chief. We believe that the NYU IPR reshapes the way readers engage with psychology and highlights the importance of psychology in everyday life.

This issue represents a culmination of rigorous research, insightful analysis, and diverse perspectives that showcase unique projects and advancements in the field of psychology. We are so proud to feature eight manuscripts covering a wide range of topics, exploring subjects from personality to the media's influence on body image to the relationship between substance abuse and suicidal ideation.

We would like to express our deepest gratitude to the authors who entrusted us with their valuable work, editors who have worked tirelessly to revise manuscripts to the highest quality, and readers for your continued support and readership.

We hope that NYU IPR continues to inspire curious minds to engage with new ideas, challenge assumptions, and spark new avenues of exploration!

Anastasia Dagounakis, Valerie Ma

Editors-in-Chief

How does Media Exposure of Body Positivity Influence Adolescent Women's Self-Image?

Zhijun Zhou

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Abstract

As a result of technological and social progress, the conventional definition of beauty has come under scrutiny. On social media, people make an appeal to spread the message of self-love and body acceptance regardless of size and shape, thereby promoting the social movement known as “body positivity.” This study aims to examine how media exposure influences adolescent girls’ perception of and satisfaction with their bodies. Initially, the study collected participants’ opinions regarding their self-esteem and body satisfaction. Subsequently, participants were randomly assigned to view one of three videos presenting different narrative perspectives, including a top-down perspective from a celebrity and an equal perspective from a peer student. Following the media exposure, participants re-evaluated their self-esteem and self-image. The results showed that the ratings of body satisfaction and self-esteem increased after exposure to both celebrity and peer conditions. These findings suggested that encouraging media messages and more inclusive beauty standards in media could aid in the short-term improvement of young women’s self-images and self-esteem.

Introduction

Media has significant impacts on adolescent self-esteem and body satisfaction, especially among young women. According to Fredrickson and Roberts (1997), mainstream media is a large factor in perpetuating the objectification of women and body surveillance. The women’s whole values are evaluated by their sexual attractiveness and physical appearance (Fredrickson & Roberts, 1997). Mainstream media acts as an external stressor, leading women to internalize unrealistic beauty standards and judge their own bodies accordingly. The internalization of these distorted weight standards heightens the risks of developing low self-image and eating disorders (Groesz et al., 2002). Notably, exposure to media content that idealizes thinness has been found to contribute to the prevalence of eating disorders (Harrison, 1997).

However, in recent years, the emergence of the Fourth-wave Feminism movement, characterized by its utilization of the internet, has brought about significant changes. In recent years, more celebrities and influencers have broken traditional beauty and body standards for women, paving the way for people to be positive about their bodies. These include

personalities such as singer Lizzo, model Ashley Graham, and tennis player Serena Williams (Wurzbarger, 2021). They are role models in the fight against traditional beauty standards, which encourages adolescents to adopt a positive body image (Mason, 2022). Their presence in the media has played a significant role in promoting body positivity and diversity.

Furthermore, social media platforms have become a powerful space for women to challenge societal expectations regarding postpartum bodies, the concept of a “bikini body,” body shaming, and the discussion of eating disorders (Holland & Tiggemann, 2016). More plus-size individuals express their body positivity beliefs on social media to encourage others to practice self-love compared to the time before the Body Positivity movement (Cartner-Morley, 2018). By sharing their personal struggles with external and internal judgments, these individuals look to inspire women to resist objectification and the harmful effects of body surveillance (Cartner-Morley, 2018).

Since there has been a rise in diverse beauty standards movements and the emergence of role models from various communities, it is expected that young people today may have greater body

confidence and improved self-esteem after being exposed to media promoting body positivity. The studies also found that some interventions have a short-term mitigative effect on the negative impacts of appearance-based comparisons. One example is the media's admission to using special effects to make people look different and when people are shown more realistic body types for comparison (Cragg et al., 2019; Posavac et al., 2001; Tiggemann & Anderberg, 2020; Want et al., 2009). According to the social comparison theory (Festinger, 1954), people tend to compare themselves with similar targets, such as peers rather than celebrities. This raises questions about whether videos about body positivity will affect adolescent women's self-images and which types of videos have a stronger effect on developing self-esteem and body satisfaction. The current study aims to evaluate the immediate effect of the media exposure of role models and normal people that represent body positivity on adolescent women's body satisfaction. There were two hypotheses tested:

H1: the media exposure about body positivity will increase the young women's self-rating on body satisfaction and self-esteem at that moment.

H2: more related media exposure (e.g., normal people's social media videos) are more influential than less related presentations (e.g., celebrity's music video).

Methods

Participants

111 female participants were recruited from NYU Psychology Research Participation System, Facebook, Instagram, Red, and WeChat. Invitations were distributed via social media platforms, emails, and NYU Psychology

Research Participation System. Participants were screened for age and gender, and incomplete and insufficient surveys were removed from the analysis. The sample data was collected via Qualtrics Survey Software and received partial course credit for participating. All participants in experimental groups were aged 18-24 years old, and participants were assigned at random to one of two conditions. Nearly 60% of participants self-identified as Asian.

Research Designs

The study used a between-subjects experimental design and participants were randomly assigned to one of the three groups. Participants would be asked to provide demographic information (age, gender identity, race/ethnicity, and sexual orientation). The participants were randomly assigned a video to watch and a survey to complete before and after the media exposure. The online questionnaire was built on Qualtrics and distributed using NYU Psychology Research Participation System. The subjects had to self-report their attitudes towards body positivity, body satisfaction, self-esteem, and two control questions, after reading and agreeing to the informed consent statement and passing the age and gender screener. Then, participants were randomly assigned to different media exposure. The two experimental conditions in test groups were Lizzo's music video and TED Talk about body positivity. Participants would retake the initial survey in a different order after watching the video.

Materials

Participants were randomly assigned to one of three conditions, with one of three videos shown to them. Each video was three minutes in length. The two experimental conditions were chosen

based on different body positivity perspectives. The first video was a music video by Lizzo, which emphasized body positivity and encouraged self-acceptance from a top-down perspective. The second video was a Ted Talk from the perspective of an equal peer in which a woman discussed her experience with body shaming and urged people to be positive about their bodies and stop judging weight. The video for the control group features calming scenery.

Measures

Body Positivity Attitudes Scale: The scale consisted of questions targeting participants' beliefs on body attitude, including statements such as "I support body positivity movement." Participants answered on a 5-point Likert scale (1=strongly disagree, 5=strongly agree). Participants were required to rate the scale before and after the media exposure.

Body Satisfaction Scale: The scale used in this study was adapted from Thompson et al. (1999). The scale consisted of questions such as "I am satisfied with my figure." Participants were asked to rate their agreement with each statement on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Participants were required to rate the scale before and after the media exposure.

Self-esteem Scale: The scale used in this study was adapted from the Rosenberg Self-Esteem Scale (2016). The scales consisted of questions such as "How do you rate your self-esteem on a scale of 5?" and "How much do you think body shape affects your self-esteem?" Participants answered on a 5-point Likert scale (1 = none at all, 5 = a great deal). Participants were required to rate the scale before and after the media exposure.

Control Questions: The scales consisted of questions such as "Would you like to donate to low-income groups for studying music now?" and "Would you like to buy some snacks for yourself now?" Participants answered on a 5-point Likert scale (1 = definitely no, 5 = definitely yes). Participants were required to rate on the scale before and after the media exposure. These questions were designed to reduce the effect of confounding variables, such as positive emotions and focus on the "true" relationship between media variables and self-image variables.

Results

Participants were grouped into three conditions: Group A participants ($n = 40$) were exposed to the role model video (celebrity's video); Group B participants ($n = 40$) were exposed to the peer video (TED Talk video); Group C participants ($n = 31$) were the control group and watched a scenery video. A series of paired and two independent t-tests were performed to check whether there were significant differences before and after media exposures for each condition in order to evaluate the hypotheses.

Media Effect (Hypothesis 1)

Both Group A and Group B had higher body satisfaction and self-esteem after media exposure. In Group A, there was a 0.30 difference in mean for self-esteem before ($M = 3.30$; $SD = 0.723$) and after ($M = 3.60$; $SD = 0.709$) media exposure, significant at $t(40) = -4.088$, $p = 0.0002$. Moreover, Group A participants also showed a 0.45 difference in mean for body satisfaction before ($M = 3.10$; $SD = 1.033$) and after ($M = 3.55$; $SD = 0.876$) the role model media exposure, significant at $t(40) = -3.0526$, $p = 0.004$.

In Group B, there was a 0.30 difference in mean for self-esteem before ($M = 3.025$; $SD = 0.768$) and after ($M = 3.325$; $SD=0.888$) media exposure, significant at $t(40) = -3.3649$, $p = 0.002$.

There was also a 0.375 difference in mean for body satisfaction before ($M = 3.25$; $SD = 0.981$) and after ($M = 3.625$; $SD = 0.807$) watching the peer video, significant at $t(40) = -2.2424$, $p = 0.032$

Table 1

The data of pre-test and pro-test of the scales of self-esteem.

Self-esteem	Group A			Group B			Group C		
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>
Before Exposure	3.300	0.723	40	3.025	0.768	40	3.333	0.802	31
After Exposure	3.600	0.709	40	3.325	0.888	40	3.367	0.869	31

Table 2

The data of pre-test and pro-test of the scales of body positivity.

Body Satisfaction	Group A			Group B			Group C		
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>
Before Exposure	3.100	1.033	40	3.250	0.981	40	3.133	1.167	31
After Exposure	3.550	0.876	40	3.625	0.807	40	3.167	1.117	31

Table 3

The data of t-tests and p-values in group comparisons.

	Group A vs. Group C		Group B vs. Group C		Group A vs. Group B	
	<i>t-test</i>	<i>p-value</i>	<i>t-test</i>	<i>p-value</i>	<i>t-test</i>	<i>p-value</i>
Self-esteem	2.756	0.0075	2.371	0.0206	0	1
Body Satisfaction	2.269	0.0264	2.159	0.0343	0.391	0.697

In the comparisons of pre-test and pro-test in self-esteem between Group A and control group, the unpaired two-sample t-test results were $t(71) = 2.756$, $p = 0.0075$. Additionally, the unpaired two-sample t-test results were $t(71) = 2.371$, $p = 0.0206$ in the comparisons of the pre-test and pro-test of self-esteem between Group B and the control group.

In the comparisons of the pre-test and pro-test in body satisfaction between Group A and the control group, the unpaired two-sample t-test results were t

$(71) = 2.269$, $p = 0.0264$. Additionally, the unpaired two-sample t-test results were $t(71) = 2.159$, $p = 0.0343$ in the comparisons of the pre-test and pro-test of self-esteem between Group B and the control group.

Both the p -values of body satisfaction and self-esteem of the comparisons of pre-tests and pro-tests among the three groups were smaller than 0.05. Therefore, we rejected the null hypothesis that media exposure on body positivity had a positive effect on female participants' body satisfaction and self-esteem.

Table 4*The control questions' data of pre-test and pro-test.*

	Group A		Group B	
	<i>t-test</i>	<i>p-value</i>	<i>t-test</i>	<i>p-value</i>
Gift	0	1	-0.7223	0.48
Donation	-3.0698	0.0051	-1.715	0.096

To determine whether the participants' positive emotions as a result of the media exposure affect their perceptions of their body satisfaction and their self-esteem, paired t-tests for control questions were also carried out. In the comparisons of buying a gift in Group A, we found that $t(40) = 0, p = 1$, which was not statistically significant. In the comparisons of willingness to donate in Group A, we found that $t(40) = -3.0698, p = 0.0051$, which was not statistically significant. In the comparisons of buying a gift in Group B, we found that $t(40) = -0.7223, p = 0.48$, which was not statistically significant. In the comparisons of willingness to donate in Group B, we found that $t(40) = -1.715, p = 0.096$, which was not statistically significant as well.

Therefore, we fail to reject the null hypothesis that media exposure on body positivity has no effect on participants' other options, such as donation and desire to send gifts. The data collection and analysis of the control questions revealed that the positive effect of media exposure to body positivity on self-esteem and body satisfaction is unrelated to the pleasant feelings elicited by the videos.

Media Relevance (Hypothesis 2)

In the comparison of self-esteem, there were no statistical significances between Group A and Group B at 95% confidence $t(80) = 0, p = 1$. Therefore, we fail to reject the null hypothesis that the

differences of relevance in media exposure have no effect on women's self-esteem.

In the comparison of body satisfaction, there were no statistical significances between Group A and Group B at 95% confidence $t(80) = 0.391, p = 0.697$. Therefore, we fail to reject the null hypothesis that the differences of relevance in media exposure have no effect on women's self-esteem.

Discussion

This study aims to investigate the impact of media exposure promoting body positivity on young women's self-esteem and body satisfaction. Additionally, it seeks to explore whether the effectiveness of the videos varies depending on their relevance to the participants. Participants in the study were randomly assigned to see a three-minute video on body positivity and answer identical questions in a different sequence before and after the stimulus. Two hypotheses were formulated for the study, but only one of them was supported by the results. The findings indicated that media exposure to body positivity has a short-term positive effect on the self-esteem and body satisfaction of adolescent female viewers, which is consistent with previous research (Quigg & Want, 2011). However, H2 is rejected since differences in the relatedness of the videos have no effect on the body satisfaction and self-esteem of the participants. Although we did not uncover a statistically significant difference in the relatedness of media exposures, this study

excluded a factor in intervening in adolescent women's self-esteem and body satisfaction, which is valuable for later research.

Furthermore, this study employed a pre-test and post-test design to assess participants' self-esteem and body satisfaction before and after media exposure. However, it identified a potential issue whereby participants appeared to be more sensitive to the topic of "body positivity," and exposure to such content might have led to a decrease in their satisfaction with their own appearances (Hamilton et al., 2007). A few participants in Group A and Group B exhibited this phenomenon, experiencing lower levels of body satisfaction and self-esteem after watching the videos. To gain further insights, feedback was collected from these participants regarding their experience with the media exposure of body positivity. They expressed that the exposure heightened their awareness of internalizing an unrealistic beauty standard as a measure to evaluate their own bodies. This realization evoked feelings of guilt and frustration among these individuals.

Generally speaking, this study revealed a short-term positive effect of media exposure on the body satisfaction and self-esteem of young women, with this effect being more pronounced in women with low self-esteem and body satisfaction. In addition, the variations in relatedness have no effect on the participants' self-esteem and body satisfaction, excluding this variable for further study.

Limitation

Although this study aims to develop women's body satisfaction and self-esteem and resist the unrealistic beauty standard pressure through presenting the concept of Body Positivity

to the participants. The current environment and media are not very women-friendly, and women are still subjected to the stress of objectification and body surveillance, both offline and online. Tiggemann (2006) demonstrated that appearance schema and body dissatisfaction have a long-term and casual relationship on women's self-images. Although the current study only presents a short-term positive effect of body positivity on adolescent women's body images in an experimental setting, it still has the potential in intervening adolescent women's low self-esteem and body dissatisfaction temporarily. The findings suggest that increasing awareness and promoting body positivity can help alleviate external beauty pressures for a limited time, serving as an effective tool for addressing self-esteem and body dissatisfaction issues among young women in the short term. However, it is important to recognize the persistent societal and media factors that contribute to these challenges and continue efforts to create a more women-friendly environment in the long term.

Due to the constraints of the SONA and Qualtrics platforms, it was challenging to regulate the level of participant engagement with the stimulus. Despite providing multiple instructions to ensure participants watched the entire video, it was difficult to ascertain whether a participant had fully completed the video or potentially quit and rewatched it. However, to ensure the data's reliability, participants who spent insufficient time (less than 3.5 minutes) or excessive time (more than 15 minutes) completing the survey were excluded from the analysis, allowing for the collection of reliable data from participants who actively engaged with the stimuli.

Conclusion

Even though there has been a shift toward a more inclusive and positive definition of beauty in recent years, women are still subjected to the dual pressures of societal expectations and the expectations they place on themselves when it comes to judging their bodies. The research on the effect of body positivity in media and which perspective of body positivity in media will be helpful for young women given that the media is considered to be one of the most ubiquitous and significant social variables that influence the beauty standard of female attractiveness (Posavac et al., 2001). The findings of this study indicate that exposure to media messages promoting body positivity has a positive influence on the self-esteem and body satisfaction of adolescent women. These findings have implications for psychoeducation initiatives and potential marketing strategies, highlighting the potential benefits of promoting body positivity in media for the well-being of young women.

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Examining the Relationship Between Substance Use and Suicidal Behavior in Adolescents: Case Studies in Arab Israeli and Ethiopian Israeli Adolescents

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Abstract

Discrimination, particularly during adolescence as a critical period for identity development, can have severe implications, including substance abuse and suicidal behavior. Understanding the major contributors and predictors of substance abuse and suicidality in ethnic minorities, who experience additional socioeconomic barriers and prejudice, is significant to target intervention strategies and decrease adverse outcomes for adolescents. Primary studies from 2007 to 2022 to be included in this review were selected, and studies included in this review examined suicidal behavior or substance abuse in Arab Israeli adolescents and Ethiopian Israeli adolescents between the ages of 12 to 21 years old. Discrimination and psychological distress were consistently found to be associated with increased substance use and as a risk factor for identity conflict and suicidal ideation and behavior. These findings offer insight into addressing substance abuse and suicidal behavior in adolescents that identify as ethnic minorities. Other risk factors, such as gender, yielded mixed results considered significant at this time. Group-based interventions addressing cultural conflict were found to be particularly helpful in decreasing discrimination and increasing support for Arab Israeli and Ethiopian Israeli adolescents. Overall, research on the mental health of Ethiopian Israeli adolescents is significantly lacking, and more research needs to be conducted on the risks and socioeconomic factors that contribute to health disparities in Ethiopian Israeli and Arab Israeli adolescent mental health. Furthermore, more research on culturally sensitive and specific interventions and longitudinal research on mental health needs to be conducted to evaluate the mental outcomes of adolescents belonging to under-resourced communities in Israel.

Keywords: Arab Israeli, Ethiopian Israeli, discrimination, adolescent substance abuse, adolescent suicidality, literature review

Introduction

Adolescence is a critical period for development, characterized by significant physical, emotional, and social changes. During adolescence, individuals are particularly vulnerable to the development of mental health problems, which may be due in part to the unique stressors and challenges adolescents face during this period of identity development. Some adolescents are more vulnerable to mental health problems due to social determinants that can further contribute to stressors already associated with adolescent emotional and behavioral problems, including adolescents from minority ethnic backgrounds. Socioeconomic inequalities have long been documented as impacting health disparities, and a decrease in socioeconomic status has been associated with an increased risk of mental health problems (Reiss, 2013). Migrant adolescents are also more vulnerable to mental health problems due to the stressors and adversities associated with migration, which can disrupt normative family structures and cultural expectations, and acculturation in a new society, which can put adolescents at increased risk of discrimination and a sense of not belonging (Bhugra, 2004).

Adolescents growing up in Israel commonly experience the consequences of constant exposure to armed conflict. Multiple studies have documented the psychological consequences of consistent exposure to conflict-related traumatic events. Overall, youth risk exposure affects their schools, communities, and families, and also in the ethnic-political context. For youth growing up in Israel, exposure to trauma due to the Israeli-Palestinian conflict is all too common. A systematic review conducted in 2011 reported that 25-35% of Israeli youth reported personal exposure to conflict-related violence, and a significant

majority (86-95%) reported exposure to terror-related media. The number of exposures to traumatic events has also been positively correlated with depression, anxiety, ADHD, and emotional disorders (Dimitry L., 2011).

Suicide, however, remains a major risk during adolescence as individuals are more likely to participate in drug experimentation and more frequent risky behaviors—suicide is the third leading cause of death among adolescents (Dawes et al., 2008). The World Health Organization estimates over 700,000 people die due to suicide every year, and although there is no established definition of suicidal behavior, it includes a range of thoughts, preoccupations, and preparations for death and suicide (Harmer et al., 2022). In adolescents, substance abuse is one of the most prevalent causes of adolescent morbidity and mortality, making it one of the primary risk factors for suicidal behavior and suicide (Dawes et al., 2008). Given the number of socioeconomic determinants that already inhibit healthy mental well-being in minorities, adolescents from underrepresented populations in Israel are particularly vulnerable.

In Israel, there are a number of ethnic and religious minorities, including Arab Israelis and Ethiopian Israelis. Arab Israelis comprise the largest ethnic minority in Israel, the majority Muslim, although many Arab Israelis are also Christian, Druze, or Bedouin. The Arab Israeli community faces many stressors associated with being an ethnic minority, particularly socioeconomic inequality and lack of culturally-sensitive and largely accessible mental healthcare, resulting in an increased risk of mental illnesses and long-term poor health outcomes (Ghanem, A. & Khatib, I., 2019). The majority of Ethiopian migrants in Israel are Jewish, having migrated as part

of the series of operations during the 1970s-1990s to migrate the Beta Israel community in Ethiopia to Israel. Some of the stressors faced by Ethiopian migrants in addition to stressors and trauma associated with migration include discrimination, lack of healthcare, and low socioeconomic status (Kaplan S. & Rosen, C., 1994).

At present, there are neither current systematic nor non-systematic reviews examining the relationship between substance use and suicidal behavior in Arab Israeli adolescents or Ethiopian Israeli adolescents. Identifying the interaction between discrimination and ethnicity can help clinicians create more culturally-competent interventions and increase community-based interventions, which can help reduce feelings of shame and negative internalization (Walsh et al., 2018) as well as empathy and close family relationships (Kogan et al., 2020) in underserved populations in Israel (Mansbach-Kleinfeld et al., 2010). Particularly for Arab Israeli and Ethiopian Israeli communities in Israel, there is a great emphasis on community and family-based interventions, which are significant to addressing prejudice, social alienation, behavior empathy, intercultural conflict, and increasing hope.

Methods

Review Question

Given the significance of adolescence for identity formation and the vulnerability of adolescents to stressors and social determinants that both have long-term implications, this paper aims to examine the relationship between substance abuse and suicidal behavior in underserved adolescents in Israel with a focus on two specific case studies: Arab Israeli adolescents and Ethiopian Israeli adolescents. In this paper, “Arab Israeli” is used to define Palestinian

Arab citizens in Israel to distinguish them from Palestinians living in the Palestinian territories and undocumented Palestinian workers from Palestinian territories, and “Ethiopian Israeli” is used to define the diaspora of undocumented first and second generation adolescents migrating from Ethiopia to Israel. The review question for this work is: what is the role of discrimination in the relationship between substance abuse and suicidality in ethnic minorities in Israel?

Search

The search strategy was first established according to the guidelines of the Population, Exposure, and Outcome (PEO) structure (Bettany-Saltikov & McSherry, 2016). The PEO structure was used to determine the researchable parts of the questions and focus on the result and research process. The search terms were identified through an initial scoping review, in which relevant literature about mental health in Israeli adolescents was first examined to identify patterns of interest with regard to the mental health of minority communities. Suicidality and substance abuse were found to be reported at higher rates, so these terms were further focused on by screening and selecting the studies from the initial scoping review. The search was conducted using the PubMed, PsychNet, Global Health, and Google Scholar databases without any language restrictions. This review focuses on peer-reviewed case studies, quantitative studies, and qualitative studies published from 2007 to the present to evaluate the literature within the last 15 years.

Selection Criteria

Studies included in this review in the Arab Israeli case study were required to have Arab Israeli as one of their study populations between the ages of 12-21.

Similarly, studies included in the Ethiopian Israeli case study were required to have Ethiopian Israelis between the ages of 12 to 21 years old as one of their study populations. Adolescents between the ages of 12 to 21 years old were chosen as the study population because research has defined the period of adolescence as occurring between the ages of 10 to 24 years old (Ryan, 2016). Furthermore, because this study aims to consider the mental health of adolescents specifically, the decision was made to exclude participants under the age of 12 because most studies with youth under the age of 12 investigated mental health in childhood, which was not within the desired scope of research. Studies were eligible if they were primary research studies of any study design that identified the risk factors affecting substance abuse or suicidal behavior and used mental health as an outcome measure. Studies excluded did not focus on Arab Israelis or Ethiopian Israelis, were conducted prior to 2007, focused only on other psychological disorders, did not examine discrimination in addition to either substance abuse or suicidality, and had participant age groups outside of selected ages.

Screening

Search results were imported first into the Covidence online platform to remove duplicates and screening. Titles and abstracts were first screened independently by the primary researcher. Full-text screening of the selected studies was performed by the primary researcher according to exclusion criteria.

Data Extraction and Synthesis

From the studies chosen in this review, the main information obtained were the study population, study design and method of assessment, the year the study was published, participant ethnicities,

sample size, risk factors tested in the study, outcome variables, and suggested interventions. The outcome of interest in this study was the relationship between ethnicity-based discrimination and substance abuse and suicidal behavior.

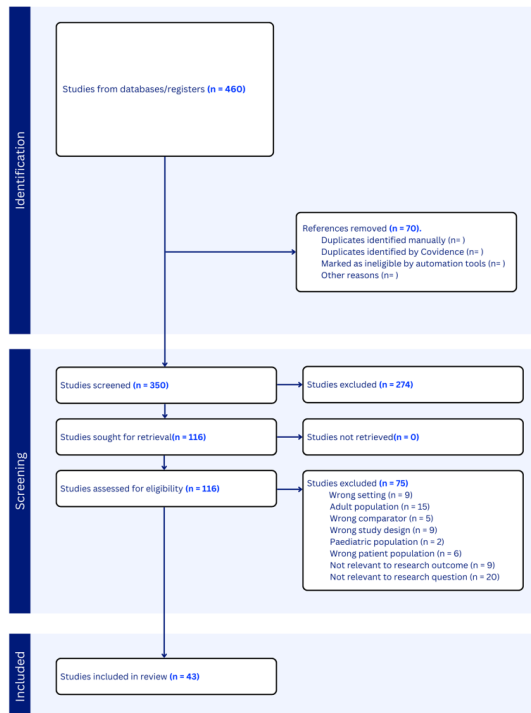
Results

Study selection

The initial search through the databases PubMed, PsychNet, Global Health, and Google Scholar yielded 460 studies. A total of 70 duplicates were removed from the selection, which left 390 articles to be screened by title and abstract. After initial screening by title and abstract, 115 full-text studies remained for screening. After the studies were screened by full-text, 41 studies remained to be included in the final review. Reasons for exclusion during the full-text screening stage included: 2 studies examined a pediatric population younger than the selected age range, 15 studies examined adult populations outside of the selected age range, 9 studies were outside of the selected region of interest (studies looking at populations in the Palestinian Territories or Gaza or past the date exclusion), 6 studies examined patient populations outside of the selected population (typically studies analyzing Palestinian adolescents or other African migrant adolescents), 20 studies were not relevant to the investigation of the relationship between ethnicity, substance abuse, and suicidal behavior; 9 studies used non-experimental non-quantitative study designs (narrative reviews, for example), 9 studies were not relevant to the research outcome (only looked at some factors affecting the subjects of interest), and 5 studies used the wrong comparator in their interventions. The total number of participants across the 41 studies was 61,385. The sample sizes ranged from 88

(Influs et al., 2019) to 8,598 (Walsh et al., 2018).

Figure 1: PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow diagram of the study selection process



Findings

Substance Abuse

A total of 14 studies investigated rates of substance abuse in the selected populations—six examined psychoactive substance use and substance abuse among Arab adolescents in Israel and eight examined psychoactive substance use and substance abuse among Ethiopian adolescents in Israel. For Arab adolescents, three studies confirmed that Arab adolescents were more vulnerable to post-traumatic symptoms correlated with substance abuse as compared with Jewish Israelis. Ethnicity was found to moderate the association between exposure to political traumas and substance use, and

Arab adolescents reported greater exposure to multiple political traumas and increased vulnerability to symptoms of posttraumatic stress (Schiff & Fang, 2014; Schiff et al., 2012). Schiff et al., however, also reported that exposure to war overall had similar effects on both Arab Israeli and Jewish-Israeli youth. Azaiza et al. found that sociodemographic characteristics such as parents' education were indicators of substance and alcohol abuse (2008). However, having a father employed in a high-status profession was also an indicator of substance abuse tendencies (2008). Adolescent substance users were reported to experience a higher risk of dropping out and delinquent behavior (2008). Two studies found an association between religiosity and substance abuse. Azaiza et al. reported that gender and religiosity were the best predictors of alcohol use and illegal use of substances, as male Arab Israeli adolescents reported higher rates of substance use compared to Jewish-Israeli adolescents, and overall, adolescents with low religiosity were also indicated to have higher rates of substance use (2008).

In Ethiopian adolescents, all except for one study (Aviad-Wilcheck et al., 2017) investigated alcohol consumption with regard to either ethnic identity, suicidal ideation, or social pressures. One study compared alcohol consumption and binge drinking among Ethiopian immigrants, immigrants from the former Soviet Union (FSU), and native-born Israelis, and found that Ethiopian immigrants were particularly vulnerable to high levels of drinking as they reported the highest levels of binge drinking and drunkenness (Walsh et al., 2014). Four studies examined the significance of social belonging and confirmed a relationship between discrimination and alcohol abuse—Walsh et al. found that feelings of alienation mediated the relationship between discrimination and alcohol use

(2018). Similarly, Walsh et al. reported that the role of ethnic identity was significant in mediating the relationship between self-perception and alcohol abuse, and discrimination leads to increased psychosomatic symptoms associated with substance use (2018, 2019; Isralowitz & Reznik, 2014). Isralowitz (2009) also noted significant differences in alcohol and problem-related behaviors between male and female adolescents. Two studies investigated the correlation between substance use, trauma, and suicide in Ethiopian adolescents. Walsh et al. noted the role of ethnic identity as a contributor to suicidal tendencies, particularly conflict between self and host identities (2012). Furthermore, Isralowitz (2014) concluded that socioeconomic factors such as parent employment and dependency on welfare benefits are correlated with alcohol use, and reported that Ethiopian youth had the highest rate of current and last 30-day beer and hard liquor consumption as compared to other immigrants from FSU and native Israelis. Overall, six studies established a positive relationship between experiences of discrimination as minorities or immigrants and increased substance abuse. Walsh et al. reported that there was a relationship between discrimination and substance abuse, and overall, adolescents reported a negative impact resulting from feelings of discrimination (2019, 2018).

Suicidal Behavior

Five studies were found to investigate suicidal behavior in Arab Israeli adolescents and Ethiopian Israeli adolescents, three of which examined suicidality in Arab Israeli adolescents and two analyzed suicidality in Ethiopian Israeli adolescents. For Arab Israeli adolescents, all studies established a higher level of suicidality and increased rates of suicidal behavior associated with increased rates of

psychological distress among Arab Israeli adolescents as compared to Jewish Israeli youth. Benatov et al. found that Muslim, Druze, and Bedouin Muslim Arab Israelis reported higher levels of depression and anxiety as compared to Jewish Israeli teens (2016). Similarly, Harel-Fisch et al., indicated that Arab Israeli adolescents experience higher rates of mental distress overall. One study comparing suicidal tendencies among Jewish Israeli, Arab Israeli, and Palestinian adolescents living in the West Bank and Gaza found that Arab Israeli adolescents showed higher rates of suicidal ideation, planning, and attempts as compared to the other populations (2012). Harel-Fisch et al. suggested that this may be because Arab Israeli adolescents must grapple with their identities as both Arabs and Israelis, whereas Palestinian adolescents may feel more coherently towards their identity as Palestinians (2012). Benatov et al. found that while Muslim, Druze, and Bedouin Muslim Arab Israeli youth showed significantly higher rates of suicidal ideation and attempts as compared to the Jewish students in the study, Christian Arabs showed relatively low rates of suicidal ideation and attempts (2016). Benatov et al. suggested that this may be because Christian Arab students had a higher socioeconomic status as compared to the other minority groups (2016). Engaging in risky behaviors was also established as a risk factor (Harel-Fisch, et al, 2012). Regarding gender as a risk factor, the studies showed mixed results. Benatov et al. suggested being female was a risk factor—Arab Israeli females were reported to have higher levels of suicidal ideation, suicide attempts, and greater psychological distress, and were more susceptible to suicidal ideation when depressed (2017). Benatov et al. suggested that female Arab Israeli adolescents may experience greater psychological distress overall due to the “double-jeopardy” faced

by Arab women living in Israel because not only do they belong to a minority ethnic group in Israel, but they also experience discrimination within a traditionally patriarchal culture (2017). Harel-Fisch et al., however, reported girls from Jewish Israeli, Arab Israeli, and Palestinian populations overall showed fewer risky behaviors, and Arab girls showed lower levels of suicidal planning and attempts.

Among Ethiopian Israeli adolescents, only one study compared rates of suicidal tendencies between Ethiopian Israeli and Jewish Israelis. Wilchek-Aviad found that among native-born Israeli youth and immigrant Ethiopian youth, Ethiopian youth were reported to experience increased suicidal tendencies in addition to higher anxiety and depression (2014). Furthermore, there was a significant negative correlation between suicidal tendencies and meaning in life for both native-born Israeli youth and Ethiopian youths (Wilchek-Aviad, 2014). Walsh et al. confirmed this finding, reporting a significant correlation between ethnic identity and suicidal ideation. For Ethiopian adolescents in Israel, lower levels of Ethiopian identity and Israeli identity and higher levels of depression were all significantly correlated with higher levels of suicidal ideation, and Ethiopian identity and depression were found to be significant predictors of suicidal ideation levels (Walsh et al., 2012). In addition, Walsh et al. suggested that suicidal tendencies and substance and alcohol abuse can be reflective of psychological distress resulting from a lack of a consolidated, positive ethnic identity associated with experiences of racism and discrimination. Interestingly, Walsh et al. did not find any significant differences between first and second-generation immigrants with respect to suicidal tendencies, substance

abuse, and psychological distress (depression and anxiety), which suggests that suicidality in Ethiopian youth is not necessarily related to immigration, but rather related to an overall phenomenon of social marginalization as ethnic minorities. Lack of familial support has also been associated with increased suicidality and substance abuse in Ethiopian Israeli adolescents as related to parental trauma and also major changes in family dynamics resulting from immigration and acculturation (Aviad-Wilchek 2017, Walsh 2018, Israelowitz 2014).

Significance of Discrimination

Both Arab Israeli and Ethiopian Israeli adolescents report a correlative relationship between experiences of racism and psychological distress. As ethnic minorities, both groups also report lower socioeconomic status, which has been proven as an indicator of substance abuse (Azaiza 2008, Benatov 2016, Walsh 2018, Israelowitz 2014). Identifying as Arab, Palestinian-Israeli, Ethiopian, or Bedouin has also been found to significantly correlate with reports of microaggressions and thus, psychological distress (Mark 2017). Discrimination and ethnic identity associated with being a minority have been indicated as predictors for posttraumatic stress, substance abuse, and suicidal ideation and behavior in Arab Israeli adolescents (Schiff 2012, Klodnick 2014, Benatov 2016). For interventions toward treating psychological distress in Arab Israeli adolescents, interventions addressing social dynamics such as outgroup and group-based skills have been shown to reduce social alienation and increase empathetic reasoning to decrease prejudice exhibited by both Arab Israeli and Jewish-Israeli adolescents (Brenick 2019, Influx 2019, Haddad 2020). Group-based

interventions have been shown to be particularly effective with both Jewish-Israeli and Arab Israeli participants to address the socio-historical context of the Israeli-Palestinian conflict. In addition, Arab Israeli adolescents have reported experiencing higher levels of posttraumatic stress associated with ethnic identity and having to deal with conflicting identities as Arab and Israeli (Klodnick 2014, Harel-Fisch 2012).

For Ethiopian Israeli adolescents, their identity encompasses both their experiences as immigrants and as ethnic minorities. As a result, the research examined in this study that addressed ethnic identity also necessitated acknowledging how it relates to their experiences with immigration, mainly regarding conflicts between host identity and ethnic identity. Ethnic identity was found to be the major predictor of substance abuse and suicidal ideation and behavior in Ethiopian immigrant adolescents (Wilchek-Aviad 2017, Walsh 2018, Walsh 2018). Furthermore, discrimination was found to affect having a weaker host identity and increased psychological distress in Ethiopian Israeli youth, resulting in a significant positive correlation specifically between discrimination and substance abuse (Walsh 2018, Isralowitz 2009, Walsh 2019). Interventions addressing intercultural conflict and family skills adapted to Israeli cultural norms have been found to be beneficial with regard to increasing trust and lowering delinquency (Benezer 2012, Kogan 2020). Family dynamics are also particularly important in creating a support system against low host and ethnic identity and experiences of discrimination, and interventions mediating cultural conflicts and familial conflicts resulting from changing family structures during immigration and acculturation are also integral in establishing culturally adapted

negotiation strategies and increasing hope and meaning in life in order to reduce low self-esteem, substance abuse, and suicidal behavior (Wilchek-Aviad 2015, BenEzer 2007, Kogan 2020, Zlotnick 2019).

Discussion

Thus far, this paper is the first systematic review to synthesize quantitative research on the relationship between substance abuse and suicidal behavior in Arab and Ethiopian Israeli adolescents. This review aims to identify the main factors contributing to substance abuse and suicidal behavior and investigate the role of discrimination in the increased rates of substance abuse and suicidality in Arab Israeli and Ethiopian Israeli adolescents. In doing so, this review conducted a systematic search of the current literature to identify the risk factors and interactions between substance abuse and suicidal behavior. In Arab Israelis, the main risk factors and predictors of substance abuse were ethnicity, discrimination, gender, religiosity, and exposure to trauma (whether political or violent). In Ethiopian Israeli adolescents, the main risk factors and predictors of substance abuse and suicidal behavior were discrimination, low ethnic identity, anxiety, depression, overall psychological distress, and immigrant status.

Some of the strengths of this systematic review are its extensive search strategy resulting in 460 studies screened and the comprehensive inclusion criteria. The methodological limitations of this review, however, are just as significant to the conclusions of this study, including the use of only one reviewer at the screening stage. This increases the bias of the selected research studies. This systematic review additionally conducted a literature search with an exclusion based on the date published, which excludes established data, particularly on the Ethiopian migrants upon

their first arrival in Israel, and national reports with data from before 2007. This decision, however, to limit the data by date was made in line with the WHO systematic review guidelines which recommends examining literature from the past 15 years.

This review, however, lacked sufficient evidence and support regarding whether a direct relationship can be established between discrimination and suicidal behavior and whether Ethiopian Israeli adolescents experienced increased rates of suicide as a direct result of discrimination. The lack of consistent findings regarding other risk factors, such as, gender reflects an overall insufficiency in available research on mental health and risk factors in Ethiopian Israeli adolescents. In this review, only two studies were selected to examine suicidal behavior and tendencies in Ethiopian Israeli adolescents, and overall, data regarding the mental health of Ethiopian Israeli adolescents was very limited as compared to data regarding Arab Israeli adolescent mental health. The results of this paper indicate significant implications for the understanding and intervention of substance abuse and suicidal behavior in ethnic minority populations. More research needs to be done, particularly on the mental health of Ethiopian Israeli adolescents. The development and analysis of culturally appropriate interventions are also necessary to improve mental health outcomes for minority populations, and future research should focus on developing and evaluating interventions that address group psychology, belonging and empathy, and risk factors that specifically affect Ethiopian Israeli and Arab Israeli adolescents. Furthermore, the lack of research also indicates an overall lack of healthcare accessibility. Future research should also explore ways to reduce disparities in healthcare and quality of care

for underserved communities in Israel. More longitudinal studies can also provide valuable insight as to the long-term impact of suicidality, substance abuse, discrimination, and mental health interventions to track the mental health outcomes over time and evaluate the impact of different interventions.

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Hate People, Like Music: Agreeableness is Specific to the Social Domain, but Extraversion is Not

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Abstract

This study investigated the relationship between personality dimensions, as operationalized by the Big Five Inventory (BFI), and music appreciation ratings across nine musical genres. We hypothesized that individuals with higher agreeableness scores would exhibit a greater appreciation of music. 1,566 participants rated their liking of 400 five-second music clips across nine genres and responded to 44 items from the BFI. Contrary to our hypothesis, no consistent relationship was found between music appreciation and agreeableness. Instead, a positive correlation between music ratings and extraversion scores was consistently observed across genres. The results suggest that extraversion, rather than agreeableness, might underlie a generally positive attitude toward music appreciation. These findings warrant further empirical exploration into how extraverted individuals, who commonly exhibit reward-seeking behaviors, may be more likely to appreciate music. Moreover, extraversion could be generalizable beyond social domains, and it could serve a potential role in reward-seeking behavior and music appreciation.

Keywords: personality, music appreciation, Big Five model, agreeableness, extraversion, music genres, music preference.

Introduction

As defined by Kernberg (2016), the concept of personality embodies "the dynamic integration of the totality of a person's subjective experience and behavior patterns." Thus, personality pervades an individual's cognition, perception, and behavior. Prior research has explored the relationship between personality traits and subjective preferences, examining factors such as food pungency (Spinelli et al., 2018), violent media consumption (Krcmar & Kean, 2005), and self-liking (Kircaburun & Griffiths, 2018). From a scientific perspective, it is imperative to be able to measure personality in a reliable and valid fashion.

The Big Five Model of personality is a trait-based lexicographic (McCrae & Costa, 1985) approach that identifies five overarching dimensions of personality: openness, conscientiousness, extraversion, agreeableness, and neuroticism, which is why it is also known as the "OCEAN" model of personality (Brand & Egan, 1989).

Music serves diverse functions for both individuals and cultures. On a societal level, music is a prominent feature of various human experiences, including battle, religion, and ethnic or cultural identity (Gregory, 1997). On an individual level, music is a vital form of entertainment and self-expression (Rentfrow, 2012). Additionally, music is employed in contemporary physical and psychological health settings to regulate emotions and modulate behavior (Hillecke, 2005). Numerous studies have investigated the relationship between music perception and personality, such as Delsing et al. (2008), which found significant correlations between music preferences and personality traits among Dutch adolescents. Most prior research on music liking and personality rely on self-report questionnaires, such as Zuckerman's Music Preference Scale

(Dollinger, 1993; Rawlings & Ciancarelli, 1997), or expose participants to a limited number of music clips (Chamorro-Premuzic et al., 2010).

In contrast, this study explores the relationship between the appreciation of music and personality in an experimental setting. According to the Big Five Inventory (BFI), agreeableness is defined as "individual differences in being likable, pleasant, and harmonious in relations with others" (Graziano & Tobin, 2013), and agreeableness is linked to low prejudices and positive evaluations of others (Crawford & Brandt, 2019; Graziano et al., 2007). More importantly, agreeableness is often associated with positivity, as demonstrated in the Aristotelian notion of likeability, positivity, and good manners (Kristjánsson, 2006) which may explain why individuals with higher agreeableness have positive media consumption and enjoy listening to all kinds of music, while disagreeable individuals tend to be more picky with music (Bresin & Robinson, 2014).

We specifically hypothesize that those with agreeable personalities will also be predisposed to like music more than others, whereas "critical and quarrelsome" people, which is one of the key items in the Ten Item Personality Inventory (TIPI) implementation of agreeableness, 0 would be inclined to dislike music (Gosling et al., 2003). In other words, we explored whether the notion of 'haters gonna hate' extends beyond interactions with other people and manifests in the appreciation of music. It is conceivable that a disagreeable personality would generalize across domains. Conversely, it is also possible that agreeableness is primarily confined to the social domain, meaning that agreeableness would be specific to personal interactions, not music appreciation. Here we empirically test whether agreeableness is specific to the social domain or generalizable to other

aspects of personality and cognition, such as music appreciation.

Method

Procedures

All procedures were reviewed and approved by the New York University Institutional Review Board (NYU IRB). The majority of participants were NYU students who enrolled in the study through the SONA system—an online platform used by the Department of Psychology at NYU for researchers to post approved studies and for students to sign up. The "Measuring Music Preferences" study offered participants two research credits and an additional \$10 per hour for time spent beyond two hours.

All participants signed consent forms and were briefed on the types of questions in the study before beginning. After completing the study, participants received a debriefing and signed a debriefing form. They were then compensated accordingly.

Participants

A total of 1566 participants engaged in the study in person. As the study was very demanding and lengthy, 1024 participants completed the study fully and in its entirety.

Materials

The study consisted of 801 trials, with 44 items from the Big Five Inventory (BFI), developed by Oliver John, Eileen Donahue, and Robert Kentle in 1991 (John et al., 1991). Several studies have confirmed the reliability and validity of the BFI as an inventory for the five personality dimensions across different languages, demographics, and cultures (Alansari, 2016; Fossati et al., 2011; Worrell & Cross, 2004; Zhang et al., 2021). The 44 BFI items were presented in random order throughout the study and assessed extraversion (8 items),

agreeableness (9 items), conscientiousness (9 items), neuroticism (8 items), and openness (10 items). See Appendix A for the list of BFI items presented in the study. Each participant listened to a total of 400 five-second music clips, selected from a pool of 1000 songs from a diverse range of sources, including everynoise.com, which is a website that "lets people explore arcane and general genres of music via an awesome word map" (MacDonald, 2013). The music clips were categorized into nine genres: Classic, Country, Electronica, Jazz, Pop, Rock, R&B, and World music. Although five-second music clips may seem brief, research has shown no difference in recognizability or psychological responses to music clips of varying lengths (Philibotte et al., 2023; Spivack et al., 2019). After listening to each music clip, participants answered several questions. Importantly for the purposes of this study, they rated their liking of the clip on a 7-point Likert scale with the following levels: "Love it", "Strongly like it", "Slightly like it", "Indifferent", "Slightly dislike it", "Strongly dislike it", "Hate it".

Data Analysis

As the data from the Likert scales are ordinal, we computed Spearman correlations between music ratings across the nine genres and the BFI scores of the five personality dimensions to explore the relationship between music appreciation and personality. In addition, we bootstrapped 95% confidence intervals and computed p-values that we then assessed for statistical significance.

Results

Our primary interest in this study was to assess the relationship between personality factors and music appreciation—specifically differentially across different

genres. The results of this investigation are portrayed in Figure 1.

As shown in Figure 1, agreeableness did not correlate with music appreciation across genres, and where it did, only weakly (e.g. pop), but was compensated by a negative correlation with classical music. In contrast, there was a strong correlation between extraversion and music appreciation across all genres.

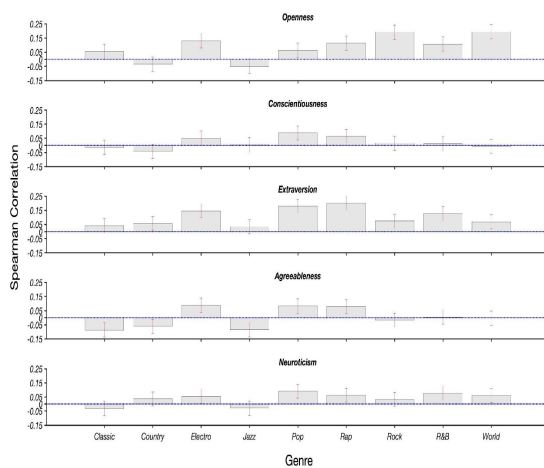


Figure 1

The relationship between personality factors and appreciation of musical genres. X-axis: Musical genre. Y-axis: Spearman rank correlation coefficient. The blue dotted line represents a correlation of 0, while the location of the bars (above or below the blue dotted line) indicates the direction of the correlation. The height of each bar corresponds to the magnitude of the correlation. The rows represent the five different personality traits, from Openness to Neuroticism. The red error bars on top of each gray bar represent the 95% confidence interval.

To assess the strength and variability of the association between personality traits and music appreciation, we identified the music genre with the highest Spearman correlation for each personality dimension. We then graphed each participant’s music

rating and personality score as a scatterplot, see Figure 2.

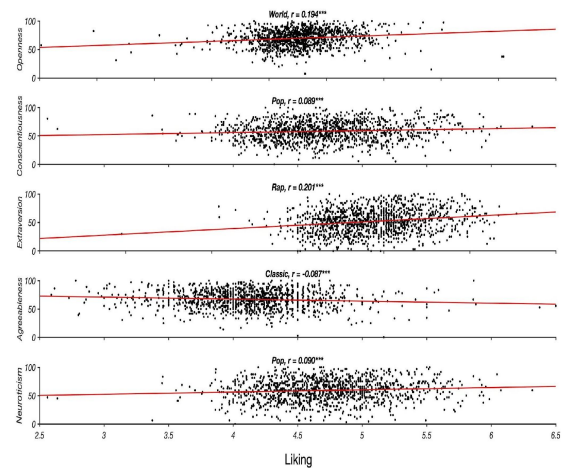


Figure 2

The strongest associations between personality and genre. X-axis: Average liking of music of this genre, by a given participant. Y-axis: Score (from 0 to 100) on the respective personality dimension. Each black dot represents data from one participant. The red lines represent the least squares regression lines. In the title of each row, we identify the genre (e.g. “World” for “World music”) and the associated Spearman correlation coefficient. Stars represent statistical significance, with one star for correlations that are significant at the 0.05 level, two stars for correlations that are significant at the 0.01 level, and three stars for correlations that are significant at the 0.001 level.

As you can see in Figure 2, the correlations between openness scores and world music ratings ($r = .194, p < .001$), conscientiousness and pop music ratings ($r = .089, p < .001$), extraversion and rap music ratings ($r = .201, p < .001$), agreeableness and classical music ratings ($r = -.087, p < .001$), and neuroticism and pop music ratings ($r = .090, p < .001$) are all highly statistically significant, the magnitude of the correlations is small,

accounting only for a small proportion of the variance. In other words, the effect size is small but well-estimated.

Discussion

In this study, we investigated the relationship between personality dimensions, as measured by the Big Five personality model, and music appreciation ratings across key musical genres. We hypothesized that there would be a general effect of personality traits on music appreciation, and specifically, a positive correlation between music ratings and agreeableness scores; agreeable people could reasonably be expected to be generally agreeable, not just in the social domain. However, this hypothetical relationship was not supported by our empirical findings. Somewhat surprisingly, there was no overall effect of agreeableness on music ratings across genres. Instead, the relationship we hypothesized would be present for agreeableness was empirically significant for extraversion—extraversion and music ratings were consistently positively and significantly correlated across genres.

Several possible explanations exist for the lack of observed relationship between music ratings and agreeableness scores. Firstly, it is possible that our results imply that personality traits are more specific than commonly believed. Considering the agreeableness items in the BFI, such as "tends to find fault with others" and "has a forgiving nature," and the absence of a relationship between music ratings and agreeableness scores, it is possible that such aspects of agreeableness are only reflected in interpersonal relationships. In other words, having a forgiving nature has nothing to do with an individual's music taste—you may like people and hate music, or have a unique music taste. In other words, people with higher agreeableness might be more

forgiving and positive toward other individuals, but not necessarily toward other objects or phenomena, including music.

Secondly, agreeableness, and inversely disagreeableness, as defined by the BFI, could be an operationalization of social cooperation rather than general positivity. Items such as "is helpful and unselfish with others," "starts quarrels with others," "is considerate and kind to almost everyone," and "likes to cooperate with others" emphasize the cooperative nature and behavior of an individual. Therefore, the positivity associated with high agreeableness could result from social preferences; people with higher agreeableness are perceived to be more positive and likable by others because of society's preference for cooperative and conforming individuals, rather than their inherently hopeful and positive nature.

Lastly, future research could focus more on extraversion and its potential positive relationship with music liking. As reported in this study, extraversion is the only personality dimension that is consistently positively correlated with music ratings across all genres. This finding suggests that extraversion, rather than agreeableness, may underlie the general positive attitude and outlook on life that we initially hypothesized. Extraversion is characterized by facets such as "warmth, gregariousness, assertiveness, activity, excitement seeking, and positive emotion" (Wilt & Revelle, 2013). While numerous studies have explored the relationship between extraversion, happiness, and sense of well-being (Catalino & Tov, 2022; Eaton & Funder, 2003; Lauriola & Iani, 2016), few have examined the potential generalizability of extraversion. Beyond social domains, the positivity associated with extraversion could potentially manifest in other aspects of life and functioning. What we usually think of as "agreeableness" might be better

conceptualized as a “cooperative” inclination (manifesting in behaviors and attitudes), as opposed to competitive stances. In this framework, “extraversion” might be better understood as “zest for life”, that just happens to manifest socially in a personality test (as the questions are about interpersonal relationships). This understanding is supported by the notion that extraverted people are more reward-seeking and introverts are more punishment-avoidant, as suggested by Gray’s Reinforcement Sensitivity Theory (RST) (Gray, 1982).

One could view the extravert as a metaphorical turtle that extends its head in anticipation, in pursuit of and hopes for rewards. Conversely, the introvert adopts a more cautious approach, keeping their head inside their protective shell to mitigate potential risks from external threats. If this is true, this suggests that the relationship between optimism and pessimism should be investigated empirically, and with specific behavioral probes involving the perception of risk and reward, beyond mere self-report. Interestingly, there was also no consistent relationship between neuroticism and music appreciation, contrary to what one could reasonably expect, given the strong burden of life for individuals high in neuroticism (Gale et al., 2013). We also reason that if it is the case that extraverts are more easily aroused (Matthews & Amelang, 1993), and if it is true that arousal correlates with liking (Cantor & Zillmann, 1973), this could explain why extraverts experience the music as more pleasing. What remains to be done is to establish whether these assumptions are correct.

In conclusion, whereas we did not find a general relationship between music liking and agreeableness, we did find one between extraversion and music liking that warrants further empirical exploration.

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Appendix Big Five Inventory Items

I see myself as a person who:

1. Is talkative (E)
2. Tends to find fault with others (A)
3. Does a thorough job (C)
4. Is depressed, blue (N)
5. Is original, comes up with new ideas (O)
6. Is reserved (E)
7. Is helpful and unselfish with others (A)
8. Can be somewhat careless (C)
9. Is relaxed, handles stress well (N)
10. Is curious about many different things (O)
11. Is full of energy (E)
12. Starts quarrels with others (A)
13. Is a reliable worker (C)
14. Can be tense (N)
15. Is ingenious, a deep thinker (O)
16. Generates a lot of enthusiasm (E)
17. Has a forgiving nature (A)
18. Tends to be disorganized (C)
19. Worries a lot (N)
20. Has an active imagination (O)
21. Tends to be quiet (E)
22. Is generally trusting (A)
23. Tends to be lazy (C)
24. Is emotionally stable, not easily upset (N)
25. Is inventive (O)
26. Has an assertive personality (E)
27. Can be cold and aloof (A)
28. Perseveres until the task is finished (C)

29. Can be moody (N)
30. Values artistic, aesthetic experiences (O)
31. Is sometimes shy, inhibited (E)
32. Is considerate and kind to almost everyone (A)
33. Does things efficiently (C)
34. Remains calm in tense situations (N)
35. Prefers work that is routine (O)
36. Is outgoing, sociable (E)
37. Is sometimes rude to others (A)
38. Makes plans and follows through with them (C)
39. Gets nervous easily (N)
40. Likes to reflect, play with ideas (O)
41. Has few artistic interests (O)
42. Likes to cooperate with others (A)
43. Is easily distracted (C)
44. Is sophisticated in art, music, or literature (O)

The capitalized letters in parentheses represent the following dimensions:

- (E) Extraversion
- (A) Agreeableness
- (C) Conscientiousness
- (N) Neuroticism
- (O) Openness to Experience

Genetic and Environmental Influences on Intelligence

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Introduction

We often hear about the cycle of poverty—where children in poverty are at a disadvantage in obtaining educational resources and career opportunities, and their failure to escape poverty has implications for their future families. Research has shown that IQ is negatively correlated with poverty rates, yet positively correlated with average income (Daniele, 2021). Therefore, there is a distinct group-based difference in intelligence when comparing individuals of low versus middle socioeconomic status. Studies on monozygotic and dizygotic twins analyze the influence of genes and environment on intelligence; results indicate a strong interplay between nature and nurture in the development of intelligence. For instance, despite monozygotic twins sharing a notable amount of similar DNA, variance in academic performance as the result of non-shared environments has been reported (Stumm & Plomin, 2018). Yet, when it comes to significant group-based differences in intelligence, I raise the question: are differences in intelligence in individuals of lower socioeconomic status—when compared to children of middle socioeconomic status—the result of genetic or environmental influences? Studies on the critical period of language, the development of language trajectories, and gray matter suggest that the influence of the environment on individuals within lower socioeconomic classes likely takes precedence over the influence of genes.

Twin Studies, Nurture, and Critical Periods

Twin studies have been one of the most efficient approaches to examining the influence of genes and environment on intelligence. McCartney, et al (1990) indicated that heritability increases over time with IQ, leading to an increase in academic variance in dizygotic twins and a decrease in academic variance in monozygotic twins with age. This finding indicated that nurture is more influential on intelligence during early childhood, whilst nature impacts intelligence during adolescence. Another study consisting of 11,000 twins found that thickening of the cortical region—positively correlated with higher IQ scores—is sensitive to the quality of the environment (Long, 2013). Additionally, IQ development shifts from nurture influences to nature influences between a window of 12-16 years of age; individuals who experience the dominance of nurture on their intelligence later into their teenage years have higher IQs (Long, 2013). The implications of these findings indicate that nurture holds the most significance during critical periods of brain development which occur between ages 2 and 7. Therefore, providing a child with an environment that fosters learning is crucial; children should be encouraged to explore through hands-on learning and collaboration with parents and friends. Furthermore, asking leading questions—to promote curiosity—and prioritizing children's emotions will lead to better outcomes regarding intellectual development.

Early childhood, where nurture dominates nature in intelligence development, lays the foundation for future learning. The case of Genie Wiley supports this notion; Genie endured social isolation and neglect for the first 13 years of her life. She was not spoken to and missed the critical period for language development which impaired the development of her brain's left hemisphere. Extensive training and therapeutic interventions for language development were deemed unsuccessful; although Genie had picked up a small vocabulary and sign language, she communicated primarily through pidgin-like sentences (ie. "applesauce buy store") (Ratey, 2001). Despite the shift in IQ development from nurture to nature in adolescence, since Genie's environment did not optimize her genes—she missed the critical period for language development.

Discussion

Genie's case, alongside research regarding the development of language trajectories and IQ in children of lower socioeconomic status (SES), indicates that environment is the causal factor of group-based differences in intelligence. Differences in the quality of language, sociability, and interaction significantly shape the development of vocabulary. Hart and Risley (2018) found that lower SES families delivered a lot of prohibitions to learning toddlers (such as "don't", "quit", and "stop"), exposed their children to a limited vocabulary, provided poor quality interactions, and spoke to their children the least when compared to parents of other socioeconomic status. Prohibitions negatively affect child development because they encourage the child not to speak; children who are regularly exposed to prohibitions experience feelings of self-doubt—they feel as though their contributions are unimportant. A connection

has been established between language development and IQ: impaired language development affects reading comprehension and writing, both of which are necessary for learning.

Additionally, poor quality interactions dissuade children from exploring and speaking, given their parents are not listening to them, adding information to promote curiosity, or initiating a conversation. The development of language trajectory is interrelated with the development of literacy, and children of lower socioeconomic status often fall behind their peers academically from an early age. Another study reported that household chaos (domestic violence, arguing, and substance abuse) and disorder—parental insensitivity and an unpredictable environment—significantly impair cognitive development (Vernon-Feagans, et al 2012). Consequently, these children experience difficulties with problem-solving, language, reasoning, and memory.

Environmental research on IQ in school children and gray matter studies further support the reduction of group-based differences in genetics, indicating that the environment has a greater influence on intelligence in the early years. Makharia et al. (2016) reported that neighborhood, physical activity, family income, parent's occupation, and quality of education heavily influence IQ. This has a number of implications: parents who have prestigious careers are able to provide their children with a better education, expose them to a more sophisticated vocabulary, and encourage them to enroll in university. Providing a child with an optimal environment ensures their ability to develop to their full genetic potential. In cases where children in poverty aren't provided with adequate learning experiences, they will have a lower IQ, despite their heredity.

Further research on dysfluent readers found that IQ didn't affect the amount of gray matter located in the right angular gyrus (associated with spatio-visual attention), rather SES did. Those of high socioeconomic backgrounds had larger gray matter volume than individuals of lower socioeconomic status. The excess gray matter was associated with "text-reading fluency, reading age, and high-frequency word reading in the higher-SES subgroup" (Martins et al, 2021). This structural anatomical advantage is the result of environmental resilience protective factors.

Conclusion

It can be justified that the environment—and not genetics—is the causal factor of socioeconomic group-based differences in intelligence levels; heritability estimates can be skewed by the environment, and homogeneity of the environment causes individual differences to become heritable (Johnson et al, 2009). Children of lower socioeconomic status do not develop cognitive abilities, like problem-solving, which will be necessary later in life. Studies on critical periods and language trajectories have proven that children require an immersive environment to maximize the development of their language trajectories; a number of deficiencies (prohibitions, an underdeveloped parental vocabulary, and poor quality interactions) have been identified in the homes of children of lower socioeconomic status which impede cognitive ability and literacy skills. Environmental studies on IQ state that reaching full genetic potential will only occur when a child is in an optimal environment. A gray matter study indicated that those of higher socioeconomic status demonstrate resilience to reading disfluency, as a result of their environment. The

influence of the environment is important because it has identified a number of deficiencies children of low socioeconomic backgrounds are exposed to.

As a result, social workers and teachers can collaborate with one another to propose both preventative measures and interventions. Perhaps educating expecting mothers of lower SES on the importance of promoting child exploration and quality interactions can improve the quality of the environment for children. Current limitations of the literature include genetic variability in socioeconomic status, which may seemingly increase the magnitude of the environment on intelligence. Future research should incorporate fMRI scans to compare differences in brain development among children of varying SES; this can give researchers a better understanding of the implications of the environment on intelligence.

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A Comparison Amongst the Three Types of Memory and the Process of Encoding, Storage, and Retrieval

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Introduction

Memory is the cognitive process of encoding, storage, and retrieval of information. There are various types of memory and each has particular qualities. Sensory memory, short-term memory, and long-term memory are the three main categories of memory. Sensory memory is the type of memory that preserves sensory data gathered from one's surroundings. This memory only exists for a short duration that precisely lasts less than a second. The process of sensory memory is automatic and takes place without any deliberate awareness. The purpose of sensory memory is to permit us to sense and understand information from the environment in actual time.

Sensory memory is split into two parts: iconic memory and echoic memory. Iconic memory is also known as visual sensory memory. An image of what we recently saw in the environment is stored in this type of memory. The duration of an individual's iconic memory, which enables us to absorb and process a remarkable amount of information, is approximately five hundred milliseconds (Ohwovori, 2023). When an individual looks at a rose, for instance, their iconic memory creates a mental picture of the rose, complete with its structure, distinct color, and sensation.

Our capacity to store and recall auditory information depends heavily on auditory memory, which is additionally referred to as echoic memory. The sounds

an individual just heard are retained in this type of memory. For a brief moment after an individual speaks to another individual, they can continue to be able to sense the tone of their voice in their echoic memory. As it enables individuals to preserve an ongoing buffer of auditory information, echoic memory is an essential element of interpersonal interaction (Muinos, 2021). When there exists a lag between the initial event and the response that ensues, this type of memory is highly beneficial. Echoic memory, for instance, enables the hearer to recall the inquiry in mind, which lasts for three to four seconds, when they come up with a reply when another individual poses a question. As a type of sensory memory, the ability and length of echoic memory are constrained and its memories may rapidly degrade if they are not repeated or passed on to long-term memory.

Short-term to Long-term Memory: Understanding Impressions

Short-term memory is a transitory type of memory that can only hold onto a small quantity of knowledge for brief periods of time, usually between twenty to thirty seconds (Jonides et al., 2008). Short-term memory, oftentimes, is referred to as working memory because it is the memory one utilizes when they are continuously processing information. Several cognitive functions, including reasoning, decision-making, and

problem-solving, depend on short-term memory. One must use short-term memory, for instance, to retain both the numbers and the initial results in mind when attempting to solve a mathematical problem conceptually. Due to its limited capacity, short-term memory can only hold a minimal amount of data at once. On average, short-term memory can store roughly seven objects (Cherry, 2022).

An extensive span of time, ranging from minutes, to hours, and even years, can be stored in long-term memory. Explicit memory and implicit memory are the two categories of long-term memory. The conscious recollection of events, facts, and experiences is known as explicit memory, which is included in the prefrontal cortex, hippocampus, and amygdala. Semantic memory and episodic memory are two further categories of explicit memory. Knowing that Rome is the capital of Italy is an example of a concept that can be remembered through semantic memory. Episodic memory is the ability to recall particular moments and occurrences, including a recent special occasion or one's birthday party that took place last year (Stangor & Walling, 2014).

An unconscious recollection of techniques, routines, and processes is known as implicit memory. Actions that we perform instinctively, like operating a vehicle or singing or dancing, rely on implicit memory. Implicit memory is also employed in emotional training, like when a person learns to link a specific emotion with a specific circumstance. It works subconsciously and is frequently triggered by application or reiteration which leads to the progressive automating of abilities and actions. Implicit memory functions on an unconscious level and can be challenging to articulate or describe when compared to explicit memory, which includes the recollection of information and experiences

while being aware of them. According to studies, implicit memory is dispersed throughout several areas of the brain, notably the cerebral cortex and basal ganglia, and is influenced by a number of neurotransmitters, namely dopamine, noradrenaline, and acetylcholine. (Schacter, 2019). If not adequately managed, implicit memory may also be influenced and develop into undesirable patterns or prejudices.

The Science of Memory: How We Encode, Store, and Retrieve Information

Three significant processes are involved in the creation and recovery of memories: encoding, storage, and retrieval. Each of these mechanisms is essential to how knowledge is retained and remembered. A mental image of information that can be kept and recovered from memory is created through a cognitive process known as encoding. Encoding refers to the method of converting data into a neurological pattern that the brain can understand and store. There are various kinds of encoding, including visual, auditory, and semantic encoding. Processing visual input, such as pictures, structures, and colors, is referred to as visual encoding. Interpretation of auditory stimuli, such as speech and noises, is referred to as acoustic encoding. Semantic encoding entails the interpretation of the meaning and the linking of data to previously learned information (McDermott & Roediger, 2023). Many elements, including focus, drive, and emotional stability, might affect how well something is encoded. Information deemed more compelling or psychologically impactful is also more certain to be stored and recalled. The act of storing involves keeping stored data in one's memory over a duration. The information must be gathered into a stable,

long-lasting memory record called storage before it can be subsequently recovered. Memory storage comes in a variety of forms, including sensory memory, short-term memory, and long-term memory. A sort of memory storage called sensory memory is used to store sensory data for a short period, usually a fraction of a second. Several variables, like the volume of data to be kept and the level of disturbance from other data, can affect how effective storage is. For instance, excessive data held in short-term memory might induce forgetfulness, as well as other data can produce excessive data.

Secrets of Memory: Encode, Store, Retrieve

If required, retrieval is the method of gaining control over previously recorded data in memory. In order for data to be retrieved, memory traces ought to be activated and information must be moved from one's storage and into one's working memory. There are various kinds of retrieval, including recognizing and recalling. Recognition of formerly observed material from a selection of possibilities is the goal of recognition retrieval, like choosing the right answer to a multiple-choice question. An illustration of recognition retrieval would be spotting a friendly sight in a crowded area. Unlike recognition, the act of recalling information entails doing it from memory with little to no assistance from outside stimuli (Qiong et al., 2017). Recall retrieval can be demonstrated by remembering the name or nickname of a former friend that one has gone to middle school with. The intensity of episodic memories and the availability of retrieving signals are two elements that can affect how well retrieval works (Kraemer & Gluth., 2023). External or internal signals known as retrieval cues aid in the process of retrieving data from one's memory.

In particular, the sight of a specific image can act as a retrieval signal to stimulate the related memory.

Encoding, storage, and retrieval are the three primary processes that make up memory formation and retrieval, and all three of them may be improved using a variety of techniques. It is crucial for the individual to focus on the data that must be retained in order to optimize and improve encoding. Three alternative strategies can be utilized to enhance the encoding, storage, and retrieval of information in memory: maintenance and elaborative processing. Repetition of knowledge facilitates its retention in short-term memory: the process of rehearsal (Norris, 2019). Information can be moved from short-term memory to long-term memory using this mechanism. There are two types of rehearsal: verbal and nonverbal. Verbal rehearsal consists of the reiteration of information, whereas nonverbal rehearsal is the perceptual mental repetition of information.

Information is temporarily held in working memory during the process of maintenance, but deeper processing is not actually taking place. Maintenance helps one retain knowledge for immediate use, but it is not a good method of storing it in long-term memory. A higher level of processing called elaborative processing includes making deeper connections between previously learned material and incoming information (Norris, 2019). This can entail creating a mental representation of the material, relating it to prior knowledge, or making connections to personal experiences. Long-term memory retrieval is thought to be most successful when information is processed elaborately. Elaborative processing is the most efficient technique to transmit information to long-term memory, but rehearsal and maintenance processing can aid to keep knowledge in short-term

memory for immediate application. Elaborative processing can aid in the development of more robust and long-lasting memories that are simpler to access later on by forming meaningful connections with previously learned material.

Power Memory: Encode, Store, and Retrieve Effectively

For the best result, data should be continuously and effectively digested in minimally distracting environments using memorization strategies like repetition, clarification, and organizing. For example, organization entails putting comparable information together, whereas elaboration entails connecting new learnings to previously learned material. It is essential to exercise retrieval in order to improve storage. The chance of forgetfulness is decreased and new memories are strengthened by frequent retrieval exercises. Moreover, organizing information into digestible bits helps enhance storage by minimizing information disturbance. Examples of organization can be either chunking or hierarchies.

Chunking is the process of separating or grouping items meaningfully, which ultimately aids in short-term memory and one is more likely to remember that specific information. Utilizing retrieval signals can aid to increase and improve retrieval. Retrieval cues are either internal or external cues that cause associated memory trails to be activated. (Thalman et al., 2019). In particular, retrieval cues like abbreviations or pictorial connections might be useful remembering tools. Fundamentally, optimizing recognition memory can be accomplished through the use of several techniques that are specific to every process. The secret is to tackle memory activities deliberately and intentionally, devoting great focus to the

data that needs to be recalled and playing an active role in the process of encoding, storage, and retrieval.

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Effects of Aquatic Therapy for Children with Autism Spectrum Disorder

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Effects of Aquatic Therapy for Children with Autism Spectrum Disorder

This paper discusses the effects aquatic recreation has on children, defined as 12 years or younger, with autism spectrum disorder (ASD). This paper highlights the importance of learning about different therapies which can improve the quality of life of patients with ASD. In addition, it is often difficult for children with ASD to participate in activities and sports. Aquatic therapy is a suitable activity for these children and even offers possible benefits. This paper conducts a literature review on the relationship between aquatic therapy and children with ASD, as well as the value this research has on children and families that are impacted by ASD.

Research Studies

Zanobini (2019)

Psychologist Mirella Zanobini's experimental design aimed "to analyze the effectiveness of a swimming program on interpersonal skills, autistic mannerisms, and aquatic abilities in children with autism spectrum disorders" (Zanobini, 2019). The

participants in the study involved 25 children aged three to eight years old (mean 5.5 years), none of which previously attended any aquatic therapy. The children were split into an experimental group of 13 participants and a control group of 12 participants. The children were matched for gender, age, and Autism Behavior Checklist (ABC) score. The ABC is a behavior rating scale with five sections (sensory, social relating, body and object use, language, and social and self-help) used for people from three to 35 years old (Zanobini, 2019). The experimental group attended the experimental swimming program, and the control group went to two rehabilitation centers. The aquatic therapy included becoming familiar with the water and learning swimming basics while creating positive relationships with adults and peers (Zanobini, 2019). There were a total of 12 sessions, and the child would participate every two weeks both individually and in small groups. The control group consisted of exposure to sports and musical activities once a week both individually or in a small group. Both studies involved children of

similar age groups, ABC score, gender, location, timeframe, and structure.

At the end of the study, only children who participated in the swimming sessions had a better response rate to eye contact, touch, facial expressions, and imitation (Zanobini, 2019). Six months after the program concluded, improvements were still observed in "social skills, autonomy and reduction of negative behaviors, and to a lesser extent responses to sensorial stimuli" (Zanobini, 2019). Every section of the total ABC score decreased, with the exception of language. The success of the aquatic therapy was attributed to the close connection and trust between the child and an educator, which is required in a new aquatic environment.

This study shows that aquatic therapy can help children with ASD; however, there are some limitations. The number of participants was relatively small and the experiment should be repeated with a larger sample size to confirm the effects of this treatment. An increase in sample size would test for significance in the experimental group (Zanobini, 2019). A further limitation of the population was that the participants were dominantly male—only six females were included in the study. The inclusion of a larger population of females in the study could confirm if this type of therapy is suitable for both girls and boys. The instruments utilized to evaluate the program served as a further limitation in the study. Instruments used for both the control and experimental group were indirect observations, such as forms. Direct observations would allow for gathering behavioral data from multiple real-life interactions and social situations. Additionally, parents and teachers can provide key details on a child in a natural setting.

Pan (2010)

Researcher Dr. Chien-Yu Pan explores how a 10-week water exercise program (WESP) impacts the aquatic skills and social behaviors of boys with ASD. All children had ASD, were between five and nine years old (mean 7.2 years), and resided in urban settings in a two-parent household. This study had two groups, with eight children in each group. The study spanned 20 weeks, which were split into two phases. In phase I, Group A received the WESP, while Group B did not. Immediately after the first 10 weeks, phase II started. Phase II reversed the treatment of the two groups to see if WESP had an influence or if the changes were spontaneous. In addition to this study, both groups continued their regular treatment during both phases.

The study took place in Taiwan; there were two 90-minute sessions for 10 weeks in each phase. This study measured both aquatic skills and social behaviors. To measure aquatic skills, the Humphries' Assessment of Aquatic Readiness (HAAR) checklist was used by the instructor and a researcher. Categories included adjustment, independence, and ability. Using the School Social Behavior Scales (SSBS-2), the child's classroom teacher would rate a child's social competence in an array of social interactions.

After Phase I, significant social improvements were found in Group A; after Phase II, significant social improvements were found in Group B because of the different timing of treatment. Group A maintained the social improvements that they had made during phase I of the trial. The results indicate that WESP improved aquatic skills in addition to social improvements. The curriculum was made progressive and started with a mental adjustment, then worked towards dynamic movement by focusing on different aspects of water. WESP included the parents of the children; many parents believe that part of

their child's success was due to the parent having a support system of other parents.

Although this study is consistent with previous research on children with ASD, there are some limitations. The population was small and only featured one demographic. All the participants were male and grew up in a similar familial structure. This research also only looked at boys; girls might have a different response to the WESP as they are at risk for body image issues that might be triggered by the lack of clothing and swimwear being worn (Delfabbro, 2011). In addition to demographics, participants may have had differences in cognitive abilities and gross motor skills. These were not evaluated and could influence findings. Their level of ability could also be similar due to their demographic; however, since it was not measured there is no way to know. The WESP curriculum should be applied to another group of children, preferably with a more diverse sample size and a pre-screening process to identify prior ability.

Ansari et al. (2021)

The fourth study, by Ansari et al. (2021), looks at the effects of aquatic versus kata techniques (a form of individual martial arts) on static and dynamic balance in children with ASD. Participants for this study were eight to fourteen years of age, were diagnosed with ASD, male, had experienced no change of treatment or lifestyle during the span of the study, were rated a one or two on the Gilliam Autism Rating Scale-2 (GARS-2), and had the ability to perform the requested exercises.

The participants were then split into three groups of ten, one control group, one kata techniques training group, and one aquatic exercise training group. The kata technique program was 10 weeks long with 20 biweekly sessions. The aquatic exercise

program was 10 weeks long with 20 sessions offered biweekly. The sessions were 60 minutes in duration and included basic swimming skills and free swim/group activities. The participants' static and dynamic balance were evaluated by two tests to measure motor skills. The stork standing test timed children standing on one leg with no shoes with their hands placed on their hips and was utilized to measure static balance. The walking heel-toe-test analyzed dynamic balance— here, children walked in a straight line with one foot right in front of the other. Both groups improved both static and dynamic balance values; this could possibly be attributed to the buoyancy property of the water. Some of the limitations of this study include the small sample size and the exclusion of female participants. There was also no follow-up study; therefore, they did not find the amount of time the improvements from the study remained.

Anadolu University (2014)

The final study by Anadolu University (2014) focused on teaching advanced movement exploration skills in the water to children with ASD. The study focused on the effectiveness of the "most to least" prompting (MLP) procedure in teaching the advanced movement of aquatic exploration skills. MLP is an instructional intervention where the instructor demonstrates full or partial physical movement rather than communicating it verbally. Children with ASD often have difficulty participating in leisure and sport activity because of their sensory and social struggles. The study consisted of only three six-year-old boys with ASD. Before the implementation of MLP, the experimental control was verified by using a low level of socially acceptable behaviors. The results of the study demonstrated that the MLP procedure was effective when teaching

water exploration skills to the three children with ASD. This result was consistent with another study using the MLP procedure for basic swimming skills. One limitation of the study was that there were only three boys in this study. Another issue was that researchers did not measure the level of physical activity before and after the study.

Synthesis

The reviewed literature contains a number of similarities and limitations. The implementation of aquatic therapy showed overall improvement in patients with ASD, as seen in the studies. One commonality between all the studies was aquatic therapy in a controlled environment with a set curriculum. The improvements from aquatic therapy can be attributed to the environment of the water. Zanobini (2015) discusses how the warm environment and the water's low viscosity allow efficient movement. This leads to a consistency between pressure and temperature that can be welcoming to children with ASD. All studies took place in therapy pools where the environment was consistent and the pools were heated. The buoyancy of the water and the reduced gravity is also an entity that can lead to independent movements that are more difficult to achieve on land. The buoyancy can allow children with ASD to move more actively and facilitates additional motor skills. In the Alaniz et al. (2017) study, there was no significant improvement in social behavior, but there was an improvement in water safety skills. Researchers found this was an outlier with their earlier studies as well; they contributed this to the length of the SSIS and the limited number of parents who completed it.

There are also specific characteristics of a swimming environment that may not be included in other types of physical therapy. Swimming programs, as explained by Zanobini, favor "relational behaviors, such

as the tendency to respond to facial affect, use of eye contact, imitation, and touch" (Zanobini, 2015). This was seen across all the studies and can also be attributed to the trust with an adult. All the studies had at least one parent present, in addition to an educator. The role of the parent was to provide familiarity and support in a new environment. Familiarity is important when introducing a child with ASD to a new environment. The parent provided comfort if needed, but they were not involved with the therapy itself. The researchers still wanted to encourage independence for the children. In addition to the thought-out parent role, there was also a low child-to-instructor ratio. Most studies were one-on-one or two instructors per child, which helps the children's social skills as it gives them direct contact with an instructor; larger group settings and different environments cause the children to miss social cues.

Limitations

Although aquatic therapy is showing mostly positive results, there are many limitations to these studies. The low sample sizes, lack of female participants, lack of diverse backgrounds of participants, and focusing on high-functioning children limit the success of these studies.

The small sample sizes are a primary issue with these studies. Larger sample sizes allow more close approximations of the group, in this case, children with ASD. ASD is such a large spectrum that a larger sample size is needed to make sure it is universal for all the different types of ASD.

Another limitation is that all the studies are male-dominated. Three of these studies only included males. The Zanobini (2019) study included 33% females, which was the highest out of the five studies discussed. The Alaniz et al. (2017) study included one female of the seven participants. Gender diversity is a must in

research. With these male-dominated studies, researchers are essentially leaving out 50% of the population. In addition, ASD has been a male-dominated medical condition due to the lack of research and diagnoses in females. According to Child Mind Institute (2022), girls are often overlooked when it comes to an ASD diagnosis. Girls often do not show stereotypical signs of ASD, like repetitive behavior. Since girls are often misdiagnosed or dismissed, many develop anxiety and depression (Arky et al., 2022). Due to the lack of diagnoses in girls, the population for researchers to choose from is limited, which enables gender disparities in the ASD community (Arky et al., 2022). It is important to include girls with ASD in research as they too deserve to benefit from experimental treatment, like aquatic therapy.

Similar to the lack of gender diversity, there is also a lack of different functional levels of ASD. All these studies focused on children with high-functioning ASD. According to the Centers for Disease Control and Prevention (CDC), about 17% of children aged three to seventeen were diagnosed with a developmental disability (CDC, 2022). Only including children that are considered high functioning is ableist. ASD studies should include all types of children with ASD, regardless of their mental abilities. There is very limited research on aquatic therapy which includes kids that have a form of mental limitation. The previously conducted procedures should either be repeated or adjusted utilizing a more inclusive population of children with ASD who have differing abilities.

Another form of diversity that is not considered is socioeconomic background. Where a child lives and their medical care is influential on the success rate of intervention and the children's capabilities. ASD is reported to occur in all racial, ethnic, and socioeconomic groups (CDC, 2022). A child

with ASD in an urban setting might be very different from a child in a rural setting. Since their day-to-day life is different, they might have different education, access to healthcare, and dialect. Additionally, a child with a certain economic background has different resources than other children. For these reasons, it is important to include diversity, as the environment is an important factor in ASD behavior and child development. Due to diversity limitations, these studies cannot be viewed as universal. There are too many groups left out to see if aquatic therapy is beneficial to females and other demographics.

In addition to the lack of diversity, these studies also lack direct observation outside of their research. This research uses observation when the study is taking place and forms filled out by children and parents. When using forms, there is a risk of lack of completion and possible confusion when answering questions, which can be eliminated with direct observation.

Future Considerations

The current studies of the usage of aquatic therapies for children with ASD are consistent with each other and promising for the future. For aquatic therapy to be widely accepted, there need to be larger sample sizes and increased diversity. As discussed in the limitations section, this research is highly rooted in selective groups. For all children to obtain treatments and receive the possible effects of aquatic therapy, they need to be included in the research. With more diversity, researchers can also gain more of an understanding of ASD and how it is perceived in different groups.

Additionally, it is important to see if there is any change in the child's natural environment. School, home, sports, and other activities are important factors in the development of children with ASD. Future research should include a way to connect

with other trusted adults in the child's life to observe any positive or negative changes outside of the study. Aquatic therapy for

certain children with ASD is promising, with more diverse samples and more ways to observe the children, the potential of aquatic therapy can be uncovered.

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Universal Contextual Sign Language: The Underlying Factors of An Experimental Linguistic System

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Abstract

UCSL (Universal Contextual Sign Language) is a linguistic system that enables individuals from diverse cultural backgrounds to communicate using a unified sign language, bridging linguistic barriers across various spoken languages. This linguistic system communicates effectively based on contexts with seven sign languages that guide the speakers throughout the conversation. To define the ‘context’ of sign languages, it represents the ‘purpose,’ or the reason why two UCSL users are brought together to converse. With negotiations being the style of how this linguistic works, they are integrated with compliance and leading of synchrony. This concept is similar to the negotiations from leaders and meets the standards of hierarchy within leaders and their supporters. Such haggles of compliance and leading of synchrony are represented as ‘motivation’ or a ‘method’ of how a message is delivered. Apart from this, what UCSL users expect to communicate can be modeled as ‘shared knowledge’ or ‘expectations of communication’ to make such conversation valid and operational. Together, purpose leads to shared knowledge and motivation. These are the three components (purpose, shared knowledge, and motivation) that contribute to how the 7 sub-languages are formed and hypothesized. These three factors are what will be defined as ‘relevancy’ in UCSL.

Keywords: UCSL, Compliance, Leading, Negotiation, Purpose

Universal Contextual Sign Language: The Underlying Factors of An Experimental Linguistic System

The Universal Contextual Sign Language (“UCSL”) is a language that people from any intellectual or cultural background are able to communicate with. The foundation of such a system is based on the effective communications that leaders tend to use. These communications are represented by a mixture of

compliance and synchronization within either body or verbal languages. For those who cannot speak verbally, this universal language is the best fit to learn, as it is solely based upon seven sign languages that allow its users to communicate efficiently according to various contexts.

The Discipline of UCSL

“Effective communication between patient and doctor is based upon ‘shared

knowledge, perceptions, and feelings regarding the nature of the disease, goals of treatment, and psychosocial support,' a central clinical function [that is] regarded as the heart of the art of medicine" (Koul, 2017). Though such a context is specific to hospital settings, this conclusion illustrates a picture of what effective communication should look like in order to establish a universal language that is efficient and concise. The communication shall have relevancy which can be considered as the following: "shared knowledge, perceptions, and feelings regarding the nature of disease", purpose ("goals of treatment"), and motivation of delivering relatively positive messages to make communication fluent ("psychosocial support"). These three components will lead to a structural conclusion of the F1 to F7 sign languages that are mentioned below.

A journal article about the relations and implications of leaders' communication style defines "a leader's communication style as a distinctive set of interpersonal communicative behaviors geared toward the optimization of hierarchical relationships in order to reach certain group or individual goals" (De Vries, Baaker-Pieper, Oostenveld, 2009). In other words, for leaders to communicate effectively, one must speak in line with the perceptive expectations of one's status within the hierarchy of one's community, hence, being loyal to the idea of fulfilling a designated role or upkeeping their relevance. This hierarchy system in linguistics must hypothetically have two factors to make it operational: a "compliance" factor and a "leading" factor within the psychological synchrony of communications. To succinctly define "compliance" and "lead" of synchrony, they are interactions of self to others that bring upon cooperation in communication

as speakers haggle in speech. Theoretically, most speeches are an outcome of negotiations of compliance and lead of synchrony. Such an idea will be explained further later in this paper. Thus, as De Vries, Baaker-Pieper, and Oostenveld (2009) state, it can be implied that purpose is what brings two people to the same place while their shared knowledge (or so-called expectations) of what they would communicate is led by UCSL language that focuses on compliance and lead of synchrony. Therefore, communications need to reach a tipping point of expectation that can publicly be accepted by anyone—providing clues on the conformation of leading of communication. In doing so, these communications will be kept tight and fluent: like the UCSL language in which the structure is based on the minimal categorical symbols of 7 sub-sign languages. In conclusion, UCSL has three components which are described in chronological order of how processing occurs amongst individuals: from purpose to expectation (shared knowledge) and from expectation to methodology of communication (compliance and lead of synchrony – USCL language).

In summary, the UCSL should hypothetically have 7 sub-sign languages that have distributed messages for each of the following figures based on the three components of relevancy of communications previously mentioned:

- F1. *Enforce*
- F2. *Agree*
- F3. *Promise*
- F4. *Compliance*
- F5. *Neutral*
- F6. *Disagree, static, immobile, not willing to comply*
- F7. *Question marks in "Who, when, where, why, how, what"*

Speakers of UCSL substitute the “purpose” of the conversation with the “context” surrounding the communication; hence, F1 or F7 is used to guide the conversation with a purpose. Therefore, if two parties meet with a premise of relevancy set upon before conversation, F1 (a direct definitive goal) or F7 (an inquiring goal) can guide the goal of communication by using F2 (agree) to F6 (disagree, static, immobile, not willing to comply) as a toolkit to converse. Thus, UCSL is spoken on the premise that both parties are aware of the purpose of communication, prompted by how F1 or F7 is used to guide said communication. Therefore, the topic of conversation is unnecessary to mention within this language, as relevance is established before the conversation is even started through the utilization of either F1 or F7.

Stefani and Marco (2019) state that the recognition of action related words would activate somatosensory regions, reflecting the semantic grounding of these symbols in action information. In other words, the main reason why F4 represents ‘compliance’ as a sole symbol while the other multiple figures are ‘leading,’ is that body language and facial muscles, which differ from verbal language, tend to serve as the action information. Body language and facial muscles are sufficient for communication to proceed by indicating when the UCSL user complies. Thus, it can be concluded that the reason why ‘compliance’ message is labeled so simply as a supplementary message system is that compliance itself is widely implied already in language systems. Therefore, those who use body language and facial emotions in conjunction with F4 frequently will have more precision in

expressing how they feel through the representation of their interpretations of what their counterpart is saying, despite simplicity. This proves why conversations are theoretically an outcome of negotiations of compliance and lead of synchrony. If compliance is prominent, and lead in synchrony is also present and, thus, it can be concluded that communication is a negotiation of polarized messages. To elaborate further, the body language and facial muscles will deeply reveal their degree of compliance to the messages.

F6—disagree, static, immobile, not willing to comply—is labeled with broad, negative expressions because its ‘leading synchrony’ may halt communication methods if expressed wrongfully. Theoretically, for communication to go on, one must make negative messages broad to ensure that the conversation is operational. Just as Catherine Moore (2019) states, positive interactions tend to keep goals achieved, cooperation accomplished, trust built, and provide constructive feedback in communication. Negative interactions, on the other hand, do just the opposite. This has been demonstrated in communication in general, where if the context of the conversation is unclear or unpleasant, the dialogue does not progress fluently. No one in such communication is willing to comply with lacking trust in one another, a somewhat important core communication factor. According to Moore (2019), negativity bias keeps speakers focused on unpleasant problems and causes them to avoid speaking or facing them. This violates the purpose of the UCSL and limits the negative message delivery in its communication system. The leading messages within these systems must, therefore, be indirect when they are negative (i.e., sour, bitter

messages), while direct leading messages are distributed with one sign language per different message, that expresses positive messages. Moreover, the “compliance” sign language system tends to have a more implicit, supplementary approach to psychological synchrony within communication, whereas the remaining 6 out of 7 sign languages are based on a “leading” approach to psychological synchrony. Thus, as a conclusion, negative messages are more associated with one sign language—compliance. F6 is a buffering system for UCSL to keep going between two speakers.

To elaborate on other applications of sub-sign languages, one thing to keep in mind is that questions tend to start conversations therefore, the F7 (a question that starts with “who, when, where, why, how, what”) and F1 (enforce) are recommended to be used together. As for other messages, F2 (agree) and F3 (promise) reveal how we typically communicate in any formal setting. “Effective negotiation skills also are essential to lead a diverse workforce and develop a successful organization” (Clohisy, Yaszemski, and Lipman, 2017). In fact, the most basic goal in any negotiation should be to establish or deepen an existing relationship while seeking an agreement that provides win-win opportunities for all parties (Clohisy, Yaszemski, and Lipman, 2017). Hence, negotiations are a core of effective communication, along with a fundamental significant factor in establishing a relationship between speakers. Therefore, in integration, it can be concluded that effective communication is negotiation with a purpose. As a result, positive leading synchrony is based on F2 and F3, with a toolkit to assert a message with F1 while conversation builds trust in one another.

Discussion

This sign language reveals a new interpretation of how language is communicated. By dissecting the professional use of effective communication, it has been concluded that it is based upon negotiation with positivity – also known as compliance & leading in synchrony. However, this language system theoretically proves to be right in thought experiments. In churches, armies, businesses, and hospitals (as previously mentioned), this language is used and reflected systematically by the leaders. Therefore, USCL aims to allow individuals to communicate efficiently, just as leaders do: by operating to ensure the simplified symbols are delivered fluently. Hence, the UCSL can be concluded as a linguistic system broadly based on markets, economy, and social and business bonding—the skeletal factors that are functional according to negotiation and compliance and leading in synchrony. As long as a group or nation relies on such components, UCSL will work in such societies.

Conclusion

Possible future directions for UCSL include machine learning (M.L.) or artificial intelligence (A.I.) systems that can learn these systems of communication and teach themselves empathy through negotiations with human customers. Though it is only theoretical, the applications of UCSL to digital computations or coding will be found useful in helping robots and other machines communicate effectively and safely with humans.

Another scope of how this system could be applied is in the predictions of individuals who may become victims of crime. By using A.I. systems and

communicating with customers inside houses (similar to the Amazon Echo platform), empathy interpreted by this A.I. system can quantify how compliant and leading customers are. As an example, one's search results in Echo will show the potentiality of who will become a victim of crimes. According to Zitek et al. (2010), "feeling wronged leads to a sense of [victim] entitlement and to selfish behavior." In other words, a victim mindset could be quantified and used on the field to prevent casualties or harm from criminals apart from society. This can be done by showing more specification and precision in F6 (i.e. a summation of negative messages), which reveals the tendency of those who will be harmed. Considering that F6 needs to be hazed for fluent conversation, precision in F6 will therefore represent an indicator of a "victim mindset." Thus, these A.I. systems within households will prove valuable for law enforcement. In addition, Maltese et al. (2016) indicate that victim-minded people tend to exhibit suspicious behavior with uncooperative mindsets. Therefore, the amplified tendency of F6 will show as a quantification in the A.I. system of who is most likely to be a victim.

Conflict of Interest: *None*

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