



McNair Association of Professionals

McNair National Research Journal 2023

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LETTER FROM THE EDITOR

Letter From the Editor

Susan Ott, Ph.D., MBA¹

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McNair National Research Journal

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It is with great pride that we publish this second annual edition of The McNair National Research Journal sponsored by the McNair Association of Professionals (MAP), Inc.

This Journal is an annual publication that showcases peer-reviewed 1) research articles and 2) research reflection pieces composed by current undergraduate McNair Scholars. It also welcomes the research conducted by recent McNair alumni who are or have been graduate students undertaking their own research projects. The undergraduate manuscripts and projects are the products of faculty-supervised research experiences undertaken by funded McNair Scholars.

The Ronald E. McNair Postbaccalaureate Achievement Program is a federal TRIO program funded by the U.S. Department of Education at 206 institutions of higher education across the United States including Puerto Rico. It is designed to prepare undergraduate students for doctoral studies through involvement in research and other scholarly activities. McNair participants demonstrate strong academic potential and are either first-generation and income-eligible college students, or members of a group that is traditionally underrepresented in graduate education. The goal of the McNair Scholars Program is to increase the number of students from underrepresented segments of society who are awarded graduate degrees, with a specific focus on doctoral degree attainment.



Ronald E. McNair was born in Lake City, South Carolina. He graduated Valedictorian from Carver High School in 1967. In 1971, he received a bachelor's degree in physics with the honor, Magna Cum Laude, from North

Carolina A&T State University. He received a Ph.D. in physics from the Massachusetts Institute of Technology in 1976. Dr. McNair was nationally recognized for his work in the field of physics and was the recipient of many honorary degrees and commendations. In 1978, he was selected by NASA for the astronaut program, and was the second African American to travel in space. On January 28, 1986, Dr. McNair along with six other astronauts died in an explosion aboard the space shuttle challenger.

These published works are made possible through the committed faculty mentors and McNair staff members who have worked directly with the Scholars during their various research experiences and programs. We thank you all for the valuable time you have spent nurturing, mentoring, advising, and coaching McNair Scholars, as they look to one day follow in your footsteps.

Congratulations Scholars, you are a wonderful representation of Dr. McNair's legacy as you pursue "Excellence in Scholarship" both today and in the future.

Susan J. Ott, PhD, MBA, CFP®

Director and PI, Ronald E. McNair Postbaccalaureate Achievement Program

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As a double-blind, peer-reviewed journal, all submissions received, as well as the contents of this publication were read and reviewed by many credentialed and published professors, librarians, post-doctoral scholars, and mentors who, as a collective, provided valuable feedback to the student authors. The commitment of their volunteered time, expertise, scholarship, follow through, and constructive feedback to our scholars is most sincerely appreciated and valued. It is their commitment to this process that has ultimately allowed us to publish these manuscripts.

Thank you all!

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RESEARCH ARTICLES

The Accumulation of Fipronil and Its Degradation Products in *Brassica Rapa* and Soil

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Fipronil is a broad-spectrum insecticide that is used in replacement of hydrocarbon-based insecticides due to its selectivity. The accuracy of fipronil's targeting mechanism has made the insecticide increasingly popular in commercial and home agriculture. However, fipronil and its degradants are now associated with negative environmental impacts on keystone species in urban and agricultural areas due to contaminated water runoff. To understand the impact of fipronil on plant health and the surrounding soil, fipronil was applied to field mustard through its roots using a mock groundwater system and by sprayed applications to the leaves. Fipronil also was applied to field mustard through a mock groundwater system to determine if field mustard could serve as a method of ridding polluted soil systems of fipronil through phytoremediation. Fipronil and fipronil sulfone were characterized by gas chromatography-mass spectrometry in both the plants and soil. All samples collected were found to be high in concentrations of fipronil and fipronil sulfone. The groundwater system and the equivalent sprayed treatment group were not significantly different for both plant and soil samples. However, there were significant differences in plant health as described by plant height and leaf count, with both the groundwater and low-concentration spray applications having lower heights and number of leaves. Finally, it was found that field mustard could potentially be used as a method of phytoremediation.

Introduction

Pesticides have been used in home gardening and commercial agriculture for centuries to fight off fungi, pests, rodents, weeds, bacteria, and insects (US EPA, 2007). To meet commercial demands for insecticides, the Rhone-Poulenc Argo company introduced phenyl pyrazoles in 1985. Phenyl pyrazoles were made to combat the resiliency of pests against the most common pesticides, mitigate environmental complications, and optimize their specificity (Hadjmohammadi et al., 2006; Vasylieva et al., 2015). Fipronil was the first phenyl pyrazole insecticide introduced to the public in 1993 and has been used for a variety of different application methods (Hainzl & Casida, 1996; Zhao et al., 2005). It is used in granular turf products, seed treatments, topical pet care products, gel baits, liquid termiticides, public hygiene, and agriculture (Jackson et al., 2009; Zhao et al., 2005). In mass agriculture it is commonly used for maize, grapes, rice, various fruits and vegetables, wheat, soybeans, and hay products (*USDA/NASS QuickStats Ad-Hoc Query Tool*, n.d.; Wang et al., 2014). Fipronil targets a multitude of invertebrates, including ants, Asian lady beetles, boxelder bugs, stink bugs, crickets, earwigs, house flies, pill bugs, and particular species of spiders (Jackson et al., 2009).

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Fipronil is a broad-spectrum insecticide that is designed to target the ligand-gated ion channel, GABA. The non-competitive blocker temporarily inhibits the chloride channel causing nervous system excitation in invertebrates, which eventually leads to death (Caboni et al., 2003; Chawla et al., 2018). Fipronil optimally binds with invertebrate receptors by a factor of 2,000 over mammalian species, which demonstrates the insecticide selectivity (Cole et al., 1993; Schlenk et al., 2001). This selectivity is further emphasized by fipronil inhibiting the glutamate-activated chloride channels that only exist in invertebrate species (Zhao et al., 2005).

Fipronil's negative environmental impacts are mainly associated with its many degradation products. The most common degradants are fipronil sulfide, fipronil sulfone, fipronil amide, and fipronil desulfinyl. The degradants produced are formed from either reduction, oxidation, hydrolysis, or photolysis reactions, and they range in selectivity and toxicity compared to the parent compound (Hainzl et al., 1998; Kumar et al., 2012). These degradation pathways depend entirely on location and environmental factors such as pH, soil moisture content, organic matter in the soil, and the plant's metabolic pathways (Bobe et al., 1998; Singh et al., 2021). In anaerobic conditions fipronil will undergo a reduction reaction producing fipronil sulfide ([Figure 1](#), Compound II) (Bobe et al., 1998; Li et al., 2015). While under aerobic conditions, the abiotic/biotic oxidation reaction forms the most common metabolite, fipronil sulfone ([Figure 1](#), Compound III) (Caboni et al., 2003; Zhao et al., 2005). Fipronil sulfone is more toxic than fipronil itself, and the metabolite is a major contributor to fipronil's effective targeting mechanism against invertebrates. Although fipronil sulfone optimally binds to invertebrate receptors, it is still 3.3 times more toxic than fipronil in aquatic species and can be more harmful to non-targeted species compared to fipronil (Caboni et al., 2003; Zhao et al., 2005).

Hydrolysis of fipronil produces fipronil amide ([Figure 1](#), Compound IV). It is formed under alkaline conditions from induced tautomerization via nucleophilic addition of a hydroxide. The degradant is incredibly stable and the cause of its stability decreases its toxicity (Bobe et al., 1998; US EPA, 2007). The formation of fipronil amide is rare, leading to a lack of research on the tautomer. Finally, the most toxic degradant of fipronil is fipronil desulfinyl and it is produced via photolysis ([Figure 1](#), Compound V). Fipronil desulfinyl is predominately found in soil or on the outside of plants, and fipronil desulfinyl's toxicity ranges from being two to ten times more toxic than the parent compound in mammalian species if it is directly ingested (Hainzl et al., 1998; Kumar et al., 2012). Fipronil desulfinyl inhibits the P450-dependent detoxification enzymes rather than the GABA receptor, and this inhibition allows for the accumulation of the degradant in vertebrate and invertebrate systems. This degradation product is a fault in fipronil's selectivity, but it is a beneficial causative in the insecticide's effectiveness (Hainzl et al., 1998; Hainzl & Casida, 1996; Li et al., 2015).

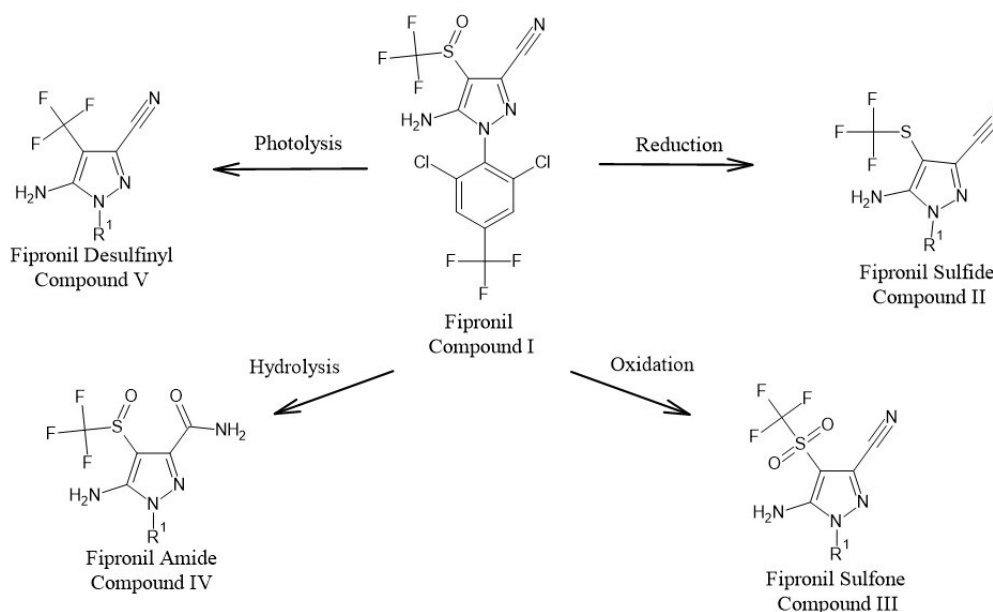


Figure 1. Fipronil's, reduction, oxidation, hydrolysis, and photolysis routes to degradation products.

All metabolites of fipronil, besides fipronil amide, are equally or more toxic than fipronil itself to targeted and nontargeted species (Bohe et al., 1998). Fipronil and its degradation products harm keystone species and are associated with colony collapse disorder in honeybee populations (Jiménez et al., 2007; Supowit et al., 2016). Research also indicates the negative effects of frequent long-term exposure in humans and was found to be as harmful as directly consuming the insecticide (Jackson et al., 2009). The consequence of frequent long-term exposure can be thyroid cancer and deregulation of the endocrine system, resulting in fipronil being classified as a possible carcinogen to humans (Jackson et al., 2009).

Fipronil and its metabolites can damage fragile ecosystems in urban and agricultural areas through direct application of the insecticide or by contamination in the water runoff (Lin et al., 2008). One possible method of fipronil entering aquatic and terrestrial habitats could be through groundwater. Groundwater is a key factor in the natural water cycle, in which precipitation enters the subsurface through the ground surface creating groundwater (Dokou et al., 2022). Fipronil could contaminate groundwater based on the high retention of the insecticide in soil and water systems. This can be supported by a study published by the California Department of Pesticide Regulation, where fipronil concentrations were found in 75 percent of samples collected from urban waterways (Cryder et al., 2019). Further investigation of this method of contamination in surrounding ecosystems can assist in elucidating the role groundwater contributes in fipronil-polluted habitats. To achieve this goal, this study aimed to assess the impact of fipronil and its metabolite fipronil sulfone on field mustard and soil introduced through both a mock groundwater system and a sprayed method to elucidate the consequence of using fipronil in a surrounding environment.

This study also aimed to assess the accumulation of fipronil and fipronil sulfone in field mustard and soil to identify if field mustard could be used as a method of phytoremediation. Phytoremediation is a method where plants are used to absorb toxins in the soil and reduce the concentration of contaminants in polluted ecosystems (Boyajian & Carreira, n.d.). Field mustard varieties have successfully served as a method of phytoremediation in environments with heavy metal pollutants in both terrestrial and aquatic habitats (Mitra, 2017). Phytoremediation provides a cheaper and easier solution for ridding heavy metal contamination. The goal of this current study is to find if field mustard's phytoremediation properties are transferable to insecticides. *Brassica rapa* (field mustard) is native to Eurasia and has adapted to thrive in North America (United States Department of Agriculture, 2012). The genus *Brassica* includes plants such as broccoli, cauliflower, and kale (Mourato et al., 2015). Field mustard has multiple agronomic uses including, as a cover crop, in intercropping systems, a forage crop, and a canola product (United States Department of Agriculture, 2012). A variety of field mustard called 'Wisconsin Fast Plant', a rapid-cycling *Brassica rapa* that was first developed in 1986, was used for this study because it can grow from germination to a flowering stage in an average of 14 days (Williams & Hill, 1986). The plant groups are relatively small, allowing for multiple experimental groups to grow in limited space. The rapid growth rate, smaller size, and the lack of previous research on this plant genus are a few reasons why this particular variety of field mustard was used to further understand the accumulation of fipronil and fipronil sulfone in plants and soil by a mock groundwater system and through the more typical sprayed application method. This particular variety of field mustard was also used because it was a sufficient method to determine whether field mustard could be used as a method of phytoremediation before testing fipronil on a larger variety of field mustard with a slower growth rate.

Materials and Methods

Chemicals and plant materials

Fipronil and fipronil sulfone standard solutions were purchased from SPEX CertiPrep (Metuchen, New Jersey) and AccuStandard (New Haven, Connecticut). Fipronil-Plus-C was purchased from Arizona Chemical Group LLC (Mesa, Arizona). Ultra-pure water was used in all experiments (18 MΩ, AquaSolutions purified water). Wisconsin Fast Plants seeds were purchased from the Wisconsin Fast Plants program as well as the Styrofoam plant boxes, soil, fertilizer, and wicks (Carolina Biological Supply, North Carolina). Ultra-pure acetonitrile (99%) (analytical grade) was purchased from EMD Millipore Corporation (Burlington, Massachusetts). Magnesium sulfate, sodium chloride, primary and secondary amine (PSA), and graphitized carbon black (GCB) were all purchased from Restek (Bellefonte, Pennsylvania).

Experimental and Control groups

A total of 160 Wisconsin Fast Plants were grown in Styrofoam planter boxes, and the planter boxes each contained 32 individual wells in an 8 x 4 arrangement. The individual wells were 4.5cm deep and 2.0cm wide, and each well had a wicking self-watering system with wicks placed into the bottom of the cell and then covered with soil. The wicks were then fed from a reservoir that contained 2L of tap water. To promote rapid growth, all plants were maintained at 25°C and continuously exposed to grow lights during the 18-day growth period. After five days the plants had emerged from the soil. This was when the height of the plants was measured and the number of leaves on each plant were counted daily for 13 days after the plants emerged. The plants were first exposed to fipronil at this time.

Fipronil was applied using both a conventional sprayed method and through the roots using the wicking system. For the sprayed systems, fipronil was applied as either a 1% v/v solution or a 5% v/v solution, which was prepared in ultra-pure water. The 1% v/v solutions were based on the manufacturer's recommended concentration for an excessive pest problem. The high-dosage sprayed group was multiplied by a factor of five of the manufacturer's recommended concentration and was used to demonstrate fipronil's ability to adhere to and be absorbed by field mustard. For each treatment group, fipronil was prepared in 740mL spray bottles with either the 1% or 5% v/v concentrations of the fipronil solution. The plants were initially sprayed five days post-emergence, and the plants were resprayed four times in ten days. The second application of fipronil was on day eight, the third application on day 11, and the final application on day 15. The plants were harvested on day 18, three days after the final treatment. For each treatment, the fipronil solution was prepared immediately before use.

To simulate the introduction of fipronil through groundwater, the water used to feed the wicks was replaced with a 1% v/v solution of fipronil. As a result, the plants in the groundwater group were continuously exposed to fipronil through their root system. This solution was refreshed every 3 days so the application period for the groundwater treatment group was consistent with the sprayed application groups. After 18 days post-emergence the plants were harvested, and the soil was retained. The soil from each group was combined, homogenized, and subsampled for extraction.

Extractions and clean up for plants and soil

All samples were prepared for gas chromatography-mass spectrometry (GC-MS) analysis using the original unbuffered QuEChERS (Quick, Easy, Cheap, Effective, Rugged, Safe) method (Anastassiades et al., 2003). Plant samples were flash-frozen via liquid nitrogen and ground. Five grams of the homogenized plant samples were placed in 50mL centrifuge tubes with 10mL of deionized water and 10mL of acetonitrile. The samples and solvents were then vortexed for one minute. Once vortexed, 4g of magnesium sulfate and 1g of sodium chloride were added to the samples. The samples were then vortexed again for one minute and then centrifuged for 10 minutes. After

the samples were centrifuged, 1.5mL of the supernatant was placed in a 2mL microcentrifuge tube with 50mg PSA and 50mg GCB for dispersive solid phase extraction (dSPE) cleanup. They were again vortexed for one minute and then centrifuged for five minutes. Soil samples were prepared for GC-MS analysis in the same manner as the plant samples, but the soil samples did not require flash freezing via liquid nitrogen.

Gas chromatography-mass spectrometry analysis

Analysis of the samples was performed by an Agilent Technologies (Littleton, Colorado) Model 6890N gas chromatograph coupled with a 7693 autosampler and a 5973N mass selective detector. A five percent phenylmethylpolysiloxane DB-5MS capillary column (30m, 0.25mm, 0.25 μ m) from Agilent J&W Technologies (Littleton, Colorado) was used. The column oven temperature program was: 50°C (one min), then 9°C/min increase stopping at 310°C (ten minutes). The mobile phase was helium with a constant flow rate of 0.8 mL/min. One μ L of the sample was injected. The injector was maintained at 230°C and the pulsed-splitless injection had a 25-psi pulse for one minute, and a 16.0 mL/min purge starting at one minute. The transfer line temperature was 310°C. The MS temperature for the ion source was 230°C and the quadrupole was set to 150°C. The electron multiplier voltage was maintained at 2000V. Selective ion monitoring was used to detect 213 m/z, 255 m/z, and 367 m/z for fipronil and 213 m/z, 255 m/z, and 383 m/z for fipronil sulfone. The retention time (R_t) was 21.6 minutes for fipronil and 22.9 minutes for fipronil sulfone.

Method validation

Percent recovery, the limit of quantification (LOQ), the limit of detection (LOD), and calibration experiments used standard solutions of fipronil and fipronil sulfone. The calibration curve was created from the standards diluted in acetonitrile ranging from 0.01-40 μ g/mL. The R^2 value for fipronil was 0.9959 and fipronil sulfone was 0.9913. Limits of detection and quantification were determined from the analysis of six blank acetonitrile replicates. For fipronil, the LOD was 0.0074 μ g/mL and the LOQ was 0.0046 μ g/mL. For fipronil sulfone, the LOD was 0.025 μ g/mL and LOQ was 0.015 μ g/mL. Finally, eight spike recovery analyses were performed with 100 μ L of the 5 μ g/mL dilution, and the previously described QuEChERS method was used for extraction. The percent recovery for fipronil was $102 \pm 9\%$ and $58 \pm 2\%$ for fipronil sulfone.

Statistical analyses

Data were analyzed in JMP 16.2 (SAS Institute) using ANOVA tests and post-hoc Tukey HSD tests to test for significant differences between treatment groups.

Table 1. The average concentration of fipronil and fipronil sulfone in field mustard from each experimental group plant samples. Different letters indicate significantly different groups ($p < 0.05$), calculated using the Tukey HSD test.

Compound	Control Concentration (mg/kg)	Mock Groundwater Concentration (mg/kg)	1% v/v Sprayed Concentration (mg/kg)	5% v/v Sprayed Concentration (mg/kg)
Fipronil	Trace	7.6±2.5 ^B	22.7±0.4 ^B	47.6±4.2 ^A
Fipronil sulfone	Trace	0.22±0.22	0.101±0.012	0.28±0.07

Table 2. The average concentration of fipronil and fipronil sulfone in *Brassica rapa* experimental groups soil.

Compound	Control Concentration (mg/kg)	Mock Groundwater Concentration (mg/kg)	1% v/v Sprayed Concentration (mg/kg)	5% v/v Sprayed Concentration (mg/kg)
Fipronil	0.030±0.004	17.45±1.15	15.9±9.2	11.1±3.8
Fipronil sulfone	0.0293±0.0015	0.146±0.004	0.10±0.04	0.0881±0.0023

Results and Discussion

Fipronil and fipronil sulfone residues in plants and soil samples

Fipronil and fipronil sulfone were detected in the plant material for all three treatment groups with trace amounts detected in the control group. There was a significant difference in the 5% v/v solutions compared to the 1% v/v solution and the groundwater system, with a high concentration found in the 5% v/v solution ($p=0.0052$; [Table 1](#)). There were no significant differences found in the fipronil sulfone concentration between any experimental groups in the plant samples ($p=0.4453$; [Table 1](#)).

In the soil, no significant differences in the fipronil concentrations were found between the experimental groups ($p=0.2010$; [Table 2](#)). There were no significant differences in the fipronil sulfone concentration between the experimental groups for the soil samples ($p=0.0569$; [Table 2](#)).

Fipronil's concentration ranged from 7.6-47.4mg/kg in the experimental groups for the plant samples, while residue levels of fipronil sulfone ranged from 0.101-0.28mg/kg ([Table 1](#)). The concentration of fipronil being higher than fipronil sulfone was expected, but the amount of fipronil sulfone found was not expected due to the short experimental period. In previous studies, fipronil sulfone fell below detection limits after day 15 (Bhardwaj et al., 2012). The high concentrations of fipronil sulfone suggests that fipronil is readily metabolized by field mustard even in a short period, and despite the concentration difference, field mustard metabolizes fipronil at similar rates. It was expected that the 5% v/v group would have significantly different concentrations of fipronil compared to the two low-dosage treatments because it was exposed to the highest dosage of fipronil, and the concentrations found in the 5% v/v solution reflected this assumption.

The concentration of fipronil ranged from 11.1-17.45mg/kg in each experimental group's soil samples ([Table 2](#)). The high retention of fipronil could be explained by the half-life of the compound in soils. In laboratory conditions, the half-life of fipronil can range anywhere from 122 to 128 days, depending on the soil composition (Singh et al., 2021). Although this study

was not conducted for a long enough period to see the true degradation rate of fipronil in soil, the half-life of the compound can explain the lack of dissipation in soil systems. The 1% v/v sprayed group showed a greater concentration of both fipronil and fipronil sulfone than the 5% v/v sprayed solution, which was not expected. This could be explained by the lack of foliage in the 1% v/v solution which allowed the soil to be directly exposed to the fipronil application, whereas the 5% v/v solution plants had greater numbers of leaves which may have reduced exposure of the soil to fipronil ([Table 2](#)). However, it was expected that the groundwater system would have the highest concentrations of fipronil and fipronil sulfone because the soil was in constant contact with the fipronil solution through the self-watering system. The lack of significant difference between the experimental groups in soil concentration shows that even when sprayed, it is very likely for fipronil to accumulate in soil systems, which can lead to environmental complications from water runoff.

Fipronil sulfone was found in the soil samples at concentrations ranging from 0.0881-0.146mg/kg in each experimental group ([Table 2](#)). Like in the plant samples, these findings suggest that fipronil degrades into fipronil sulfone readily in a short time frame. Despite the concentration difference between the experimental groups, there was no significant difference found between them in the fipronil sulfone concentrations.

Most importantly, it was found that there was not a significant difference between the groundwater system and the 1% v/v sprayed group, which lead to the conclusion that field mustard could be used as a possible method of phytoremediation. This is because fipronil was absorbed by field mustard at similar rates whether it was exposed to the root system or the foliage of the plant. The groundwater treatment showed over-saturation of fipronil, which further provided evidence that field mustard could sufficiently serve as a method of phytoremediation for insecticide contamination. Though this research did not give the percent absorption of fipronil in field mustard, or the maximum accumulation of fipronil in field mustard, it did, however, show that significant amounts of fipronil can be removed from the solution when directly exposed. This evidence created the first steps into further research on whether field mustard can be used as a method of phytoremediation not only for heavy metals but also insecticides.

The high concentration of fipronil in a groundwater system provides evidence that water runoff can easily contaminate the surrounding fields and natural habitats near commercial agriculture farms. It is important to note that there was a small concentration of fipronil and fipronil sulfone found in the soil control groups ([Table 2](#)). This is most likely due to cross-contamination from either the GC-MS or during the sample preparation. There were only trace amounts of fipronil and fipronil sulfone found in the control plant samples ([Table 1](#)).

The retention of fipronil and its degradation product in field mustard after 18 days conflicts with the results of previous studies on the dissipation rates of fipronil in various types of cabbage (Bhardwaj et al., 2012). In previous

studies, where fipronil was only applied once to a growing cabbage patch, fipronil and its degradation products were below detection limits after day 15 (Bhardwaj et al., 2012). Only one study researching the relationship between the enantiomers of fipronil in red cabbage had similar detection levels to this study. This was on day ten after applying fipronil once (Liu et al., 2008). The analysis of fipronil and fipronil sulfone concentrations was conducted three days after the last insecticide application in this study. This suggests that the high residue levels of fipronil and its degradation product found in the current study were due to the number of applications and the short time frame between application and data collection.

Effect of fipronil on plant health

There was no significant difference in plant height found between the control group and the 5% v/v sprayed application plants. These two groups were both significantly different than the low-dosage treatments, with the 5% v/v group and the control being significantly taller ($p < 0.0001$; Figure 2, left panel). For leaf counts, the control group was not significantly different than any of the experimental groups. The 5% v/v solution was significantly different than both the low dosage groups, resulting in an abundance of leaves in the 5% v/v solution compared to the low dosage groups ($p = 0.0013$; Figure 2, right panel).

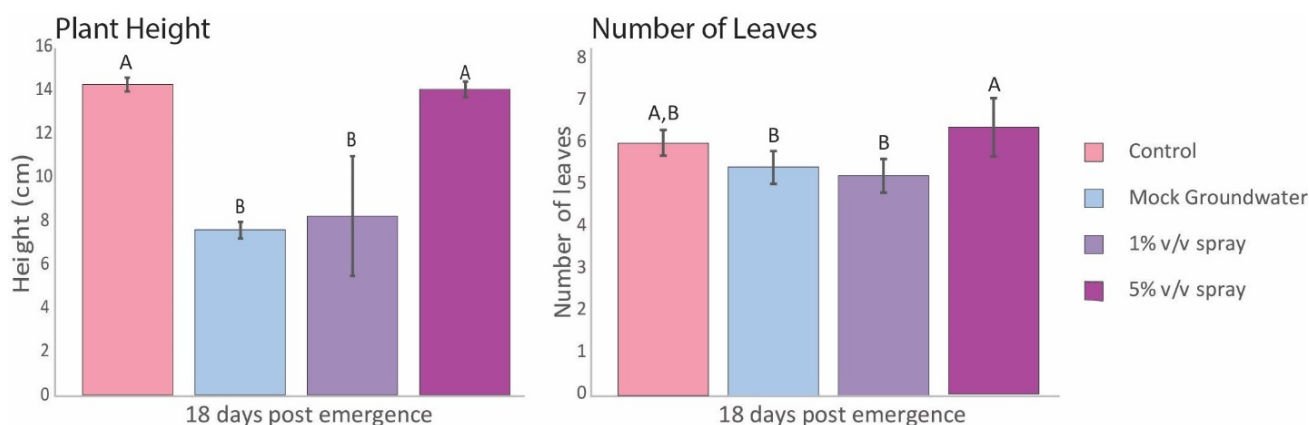


Figure 2. The average plant height (left) and number of leaves (right) for field mustard plants in each treatment group on harvest day with the error bars representing the standard deviations. Different letters indicate significantly different groups ($p < 0.05$), calculated using the Tukey HSD test.

The final plant height in the 5% v/v sprayed solution and the control group was significantly higher than the final plant height in both the groundwater system and the 1% v/v sprayed solution. Additionally, the 5% v/v sprayed solution group had significantly more leaves than the groundwater system and the 1% v/v sprayed solution groups. These findings reflect the damage shown in the low-dosage groups. The damage to the low dosage groups could influence dissipation rates, absorption levels, and crop yield in field mustard. Future research is needed to explain the source of the damage to the low-dosage groups in field mustard, and why this damage was not found in the high-dosage group. Further research also needs to understand how the damage to the low-dosage group affects field mustard's ability to serve as a method of phytoremediation.

Final Conclusions

The lack of significant difference between the mock groundwater system and the 1% v/v sprayed treatment group displayed how readily fipronil and fipronil sulfone can contaminate natural habitats and waterways by a passive application of water runoff. This research exposes the need for precautions when using insecticide in excess to avoid harming ecosystems of non-targeted species. The high metabolism rate of fipronil-to-fipronil sulfone found in field mustard plants and soil systems further emphasizes the potential risk factor of waterway contamination due to the high concentrations found for fipronil sulfone. Further research is required for the precautionary methods needed to efficiently use this insecticide without an unintentional application to other habitats. This research also showed that field mustard could be used as a method of phytoremediation for fipronil-polluted areas, based on the high concentrations of fipronil and fipronil sulfone in the mock groundwater treatment group. Further research is needed to compare the actual accumulation levels of fipronil in field mustard versus the total concentration of fipronil applied, as well as the maximum retention of fipronil in field mustard to understand the full capacity field mustard can be used for a method of phytoremediation. Future research could benefit from using a slower and larger field mustard variety to definitively conclude field mustard's ability to serve as a method of phytoremediation.

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RESEARCH ARTICLES

The Effect of a High-intensity Functional Training Warm-up on Deadlift 1-RM Performance

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General warm-ups (GWU) are typically done before an individual participates in resistance exercise. Over the years, different warm-ups have been designed to help individuals prepare for physical activity; however, there is little known as to which warm-ups fully optimize muscle potential. The purpose of this study was to measure the effects of a high-intensity functional training (HIFT) GWU and a traditional (TRAD) GWU on a conventional barbell deadlift one-repetition maximum (1-RM) test. Seven healthy, resistance trained males participated in the study. The participants were randomly counterbalanced into the traditional GWU or the HIFT warm-up. The GWU consisted of cycling on a Monark cycle ergometer for 15 minutes at a heart rate between 55-60% of maximal heart rate. The HIFT consisted of a 250-meter row on a rowing ergometer, 5 burpees, 10 kettlebell swings (53-pound kettlebell), and 15 air squats for as many rounds as possible within 15 minutes.

Introduction

A proper warm-up preceding a bout of resistance exercise is important to ensure optimal performance and to reduce the chance of injury (American College of Sports Medicine, 2018; Woods et al., 2007). The standard for assessing muscular strength is performing a 1-RM test. This test finds the greatest resistance that can be moved safely for one repetition (American College of Sports Medicine, 2018). For this reason, a proper warm-up is crucial to prevent injury and recruit the neuromuscular system to work against resistance safely and effectively (American College of Sports Medicine, 2018; Bishop, 2003).

Warming up is often prescribed with a general cardiovascular warm-up of 10–20 min and stretching followed by a specific warm-up (SWU) for that specific sport (Bishop, 2003; Sander et al., 2013; Taylor et al., 2013). By performing a warm-up, higher performance and lower risk of injury occur due to an increase in muscle temperature, which is associated with enhanced elasticity of muscle and connective tissue and greater joint range of motion (Lehmann et al., 1970; Safran et al., 1988). An increase in muscle temperature has been reported to decrease the stiffness of muscles and joints, increase the transmission rate of nerve impulses, change the force-velocity relationship, and to increase glycogenolysis, glycolysis and high-energy phosphate degradation (Bishop, 2003). Previous studies have reported that increasing body temperature led to enhancement in ATP utilization in type II muscle fiber recruitment (Gray et al., 2006, 2008). The intention of a GWU is to raise

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muscle temperature, whereas the aim of a SWU is to increase neuromuscular activation (Abad et al., 2011). Current guidelines recommend performing a GWU and SWU before engaging in a 1-RM.

A GWU usually involves a low-intensity aerobic component (e.g., submaximal running) and stretching exercises; a SWU involves specific-skill exercises (Andrade et al., 2015; Young & Behm, 2002). One study showed that using only a GWU and SWU of around 10 min was as good as using a warm-up of 20 min, which included a phase of static or dynamic stretching, for repeated sprint performances (Taylor et al., 2013; van den Tillaar et al., 2019). A related study concluded that a warm-up of maximal strength may elicit higher force production for the upper and lower limbs (Atlanzio et al., 2014), which suggests that using resistance exercise in the warm-up may lead to greater force production.

Group-based HIFT temporarily combines aerobic and anaerobic exercise with a focus on functional, multi-joint movements, resulting in improvements to aerobic capacity and body composition (Katie M Heinrich et al., 2014; Feito et al., 2018). Recently, several investigators have examined the effects of HIFT-based programs after multiple weeks of training and have shown significant improvements in maximal oxygen consumption (~12%), decreases in body fat (~8%), as well as improvements in bone mineral content (~1%) after 16-weeks of HIFT (Feito, Hoffstetter, et al., 2018; K.M. Heinrich et al., 2012, 2015). HIFT can be modified to any fitness level and elicits greater muscle recruitment than repetitive aerobic exercises, thereby improving cardiovascular endurance, strength, and flexibility (Feito, Hoffstetter, et al., 2018; K.M. Heinrich et al., 2012, 2015; Muraswka-Cialowicz et al., 2015). A warm-up composed of HIFT could potentially enhance an individual's physiological and neural stimulus more than that of a traditional warm-up due to the greater muscle fiber recruitment and higher temperature (increased blood flow) elicited from this exercise.

There are limited studies involving a high-intensity GWU routine. However, one study found the longer-duration, low-intensity GWU elicited a greater 1-RM on the leg press than a shorter duration low-intensity GWU protocol (Abad et al., 2011). In another study, researchers demonstrated long duration (15 minutes), low-intensity (40% VO₂max; 55% of maximal heart rate) cycling elicited the greatest 1-RM compared to long duration moderate-intensity (70% VO₂max), short duration (5 minutes) low-intensity, and short duration moderate-intensity cycling (Barroso et al., 2013).

The purpose of this study is to measure the effects of a HIFT warm-up and a traditional GWU on 1-RM test, power output, and force output on the conventional barbell deadlift exercise. Due to previous studies showing greater neuromuscular activity and increase in temperature during a HIFT workout, our hypotheses are that the HIFT condition will elicit a greater 1-RM, power output, and force output than the traditional GWU.

Methods

Participants

Seven healthy male individuals between the ages of 19 to 25 volunteered to participate for this study. Participants did not receive an incentive to participate in the study. Recruitment criteria included being involved with resistance training for at least a year (as well as performing the deadlift in their training), previously performed HIFT, and ability to deadlift at least 1.5 times their body weight. Participants were aware of the two conditions as well as the protocols that followed each; informed consent was acquired before testing was performed.

Protocol

Each participant had a total of three visits to the University of Montevallo Human Performance Laboratory. Testing sessions were performed in a randomized, counterbalanced order at least 72 hours (about 3 days) apart but no more than one week apart at the same time of the day (within 1 hour). All testing was performed in a thermoneutral environment.

The first visit consisted of the familiarization at the university data collection site. Participants read and signed the Institutional Review Board (IRB) consent form preceding any data collection occurred. After consent was given, the participants were asked to complete a medical history questionnaire and biometric data was collected. The biometric data consisted of height and weight. The medical history includes the self-administered pre-exercise medical history form and Physical Activity Readiness Questionnaire (Warburton et al., 2010), which assesses the ability of the participant to be healthy enough to undergo the research. The biometric data collected included height and weight. Height was measured to the nearest half-cm via the stadiometer. Weight was measured to the nearest half-kg via digital scale. Following measurements, the subjects were shown and asked to demonstrate the exercises that were to be performed during the two warm-ups to ensure proper form and understanding. Lastly, participants were placed into random, counterbalanced groups.

The second and third visits, participants were asked to avoid caffeine, strenuous activity, and alcohol 48 hours (about 2 days) before testing day. Participants were also instructed to arrive under a two hour fast while keeping a food log of meals consumed that day and replicate that diet for the following visit. Prior to testing, participants were screened to determine if they had engaged in any prohibited activities in the previous 48 hours (about 2 days), along with a visual analog scale (VAS) assessing their fatigue, perceived strength, and feelings of recovery (Carifio & Perla, 2008; Norman, 2010). Both protocols lasted a period of 15-minutes with no rest between the GWU and SWU.

general warm-up conditions

Condition A (Traditional GWU): 15-minutes of cycling on the Monark cycle ergometer (Monark, Langley, WA) at 55-60% of their maximal heart rate.

Condition B (HIFT GWU): 15-minutes to complete as many rounds as possible performing a 250-meter row on a rowing ergometer (Concept 2; Morrisville, Vermont), 5 burpees, 10 kettlebell swings (53-pound kettlebell), and 15 air squats. The row included using a row ergometer machine to pull a handle with a cable while sitting in a movable seat and pulling with the hips, knees, and arms. The burpee consisted of lowering down to the ground so that the chest and hips touch the ground then standing up and jumping in the air with arms overhead and trunk, hips, and knees fully extended. The kettlebell swings included swinging a single 53-pound kettlebell with two hands from between the legs to an eye-level position with elbows extended. The air squats involved placing the feet shoulder width apart and lowering the body from a standing position through flexion of the knees and hips until the thighs were parallel with the floor, then raising the body back into a standing position by fully extending the knee and hips, with the trunk erect throughout the movement.

specific warm-up

(Adapted from Baechle & Earle, 2008)

The specific warm-up, completed by both conditions, is the following:

1. Instruct the athlete to warm-up with a light resistance that easily allows 5 to 10 repetitions.
2. Provide a 1-minute rest period.
3. Estimate a warm-up load that will allow the athlete to complete three to five repetitions by adding:
 - 30 to 40 pounds (14-18 kg) or 10%-20%
4. Provide a 2-minute rest period.
5. Estimate a conservative, near maximal load that will allow the athlete to complete two to three 3 repetitions by adding:
 - 30 to 40 pounds (14-18 kg) or 10% to 20%
6. Provide a 2- to 4-minute rest period
7. Make a load increase:
 - 30 to 40 pounds (14-18 kg) or 10% to 20%
8. Instruct the athlete to attempt a 1-RM.
9. If the athlete was successful, provide a 2- to 4-minute rest period and go back to step 7.

Table 1. Physical characteristics of participants. Represents mean age, height, and weight variables.

N=7	Minimum	Maximum	Mean
Age	19	25	21.6
Height (cm)	172	180	175
Weight (kg)	67	108	84.6

If the athlete failed, provide a 2-to-4-minute rest period, then decrease the load by subtracting:

- 15 to 20 pounds (7-9 kg) or 5% to 10%

AND then go back to step 8.

Continue increasing or decreasing the load until the athlete can complete one repetition with proper exercise technique. Ideally, the athlete's 1-RM will be measured within three to five testing sets.

Measurements

The primary dependent variables measured were the maximum weight lifted and the maximum force and power generated. The 1-RM was determined by how much the participant could lift on an Olympic barbell while performing the conventional deadlift. The lift was successful when the participant fully extended the knees, trunk, and hip with the bar still in hand. The weight of the deadlift was increased as the participant saw fit until the lift could not be completed. The Tendo unit (Tendo Sport, London, U.K.) was attached to the barbell to measure the power output and maximal force of the participant's maximum deadlift.

Results

The data is reported as mean + SD. [Table 1](#) represents physical characteristics we collected from our participants. For 1-RM, there was no statistical significance ($p = 0.325$) between the TRAD (386.4 + 67.7 lbs) and HIFT (376.4 + 70.4 lbs) warm-ups ([Figure 1](#)). There was no statistical significance ($p = 0.411$) in force between the TRAD (1811.0 + 292.2 N) and HIFT (2169.1 + 870.7 N) warm-ups ([Figure 2](#)). For power, there was no statistical significance ($p = 0.991$) between the TRAD (568.9 + 236.8 W) and HIFT (567.29 + 260.2 W) warm-ups ([Figure 3](#)).

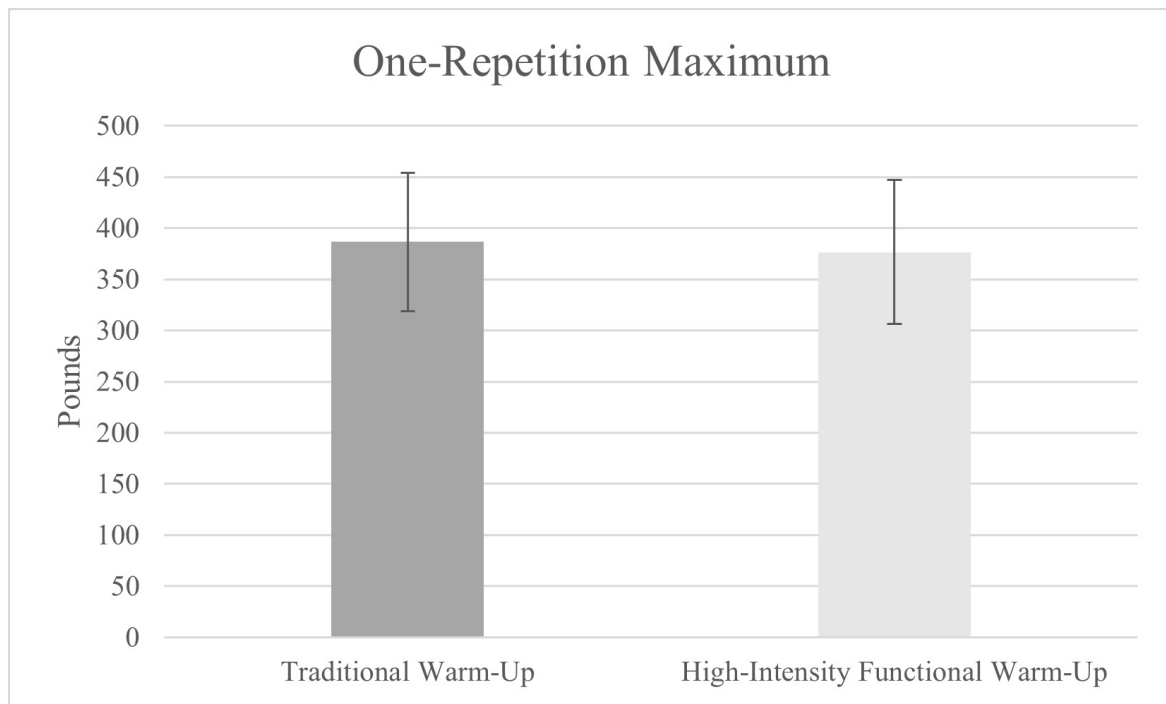


Figure 1. One-Repetition Maximum. Represents the mean of the 1-RM of the TRAD and HIFT conditions.

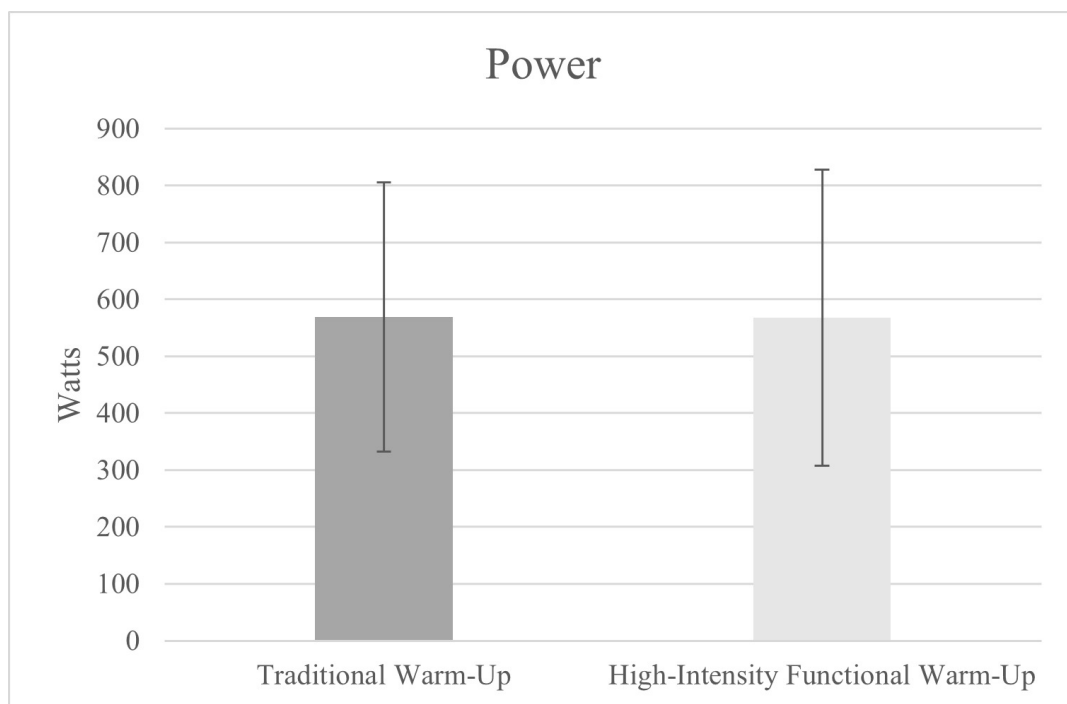


Figure 2. Force output. Represents the mean force output of the TRAD and HIFT conditions.

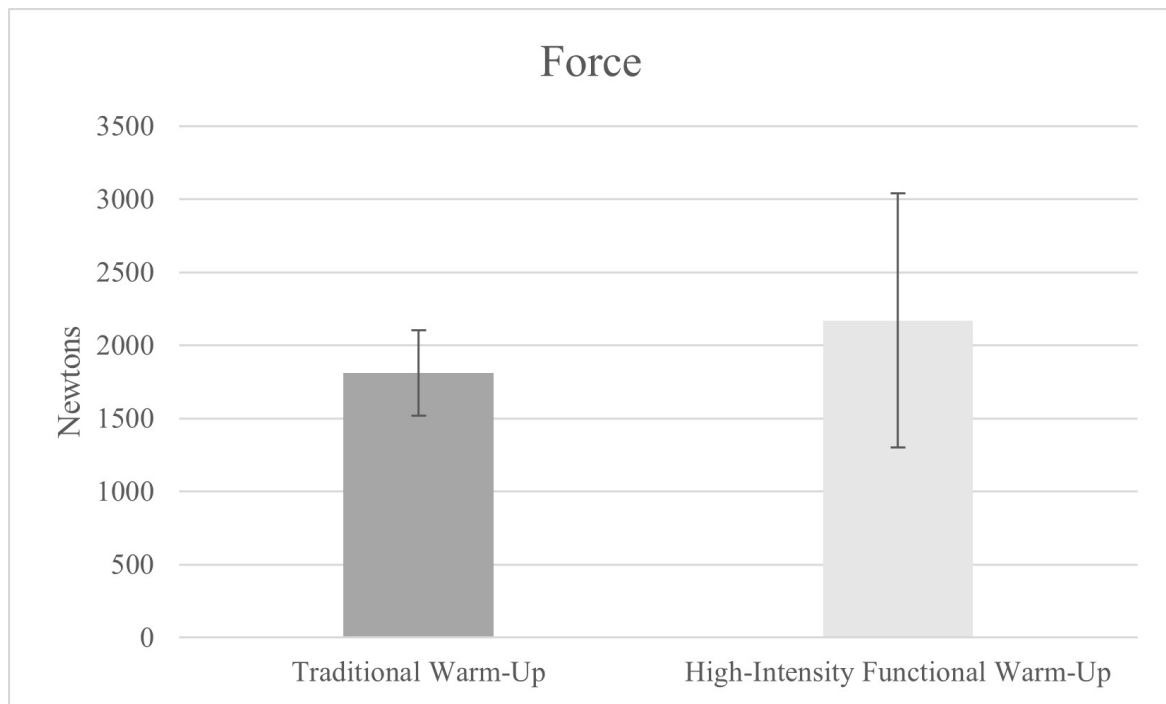


Figure 3. Power output. Represents the mean power output of the TRAD and HIFT conditions.

Discussion

This investigation examined the differences between a traditional general warm-up and a novel high-intensity functional training general warm-up on barbell conventional deadlift 1-RM, force output, and power output. There were no statistical differences between the two conditions on 1-RM, force output, or power output. Therefore, our hypothesis that the HIFT will elicit a greater one repetition maximum must be rejected. The results suggest that both a Traditional and HIFT warm-up can elicit a similar effect on a 1-RM. Expanding on these results of the current investigation, three participants deadlifted more after the HIFT warm-up by a factor of 5 to 10 lbs compared to their 1-RM attempt after the GWU. However, the remaining four participants deadlifted more weight post GWU by 5 to 60 lbs. compared to their attempt post HIFT warm-up.

Relevant studies had comparable results to the present investigation. One study consisted of nine male athletes and tested three variables on jump performance: no warm-up (control), a 15-minute moderate-intensity warm-up at 60% of maximal oxygen consumption (VO₂ max), and a 15-minute high-intensity warm-up at 80% of VO₂ max; both the moderate and high-intensity warm-ups were performed on a treadmill. The researchers found that the high-intensity warm-up elicited greater jump performance than the control and moderate-intensity warm-up when the jump was performed after a rest period. However, the moderate-intensity warm-up proved to be more effective on jump performance, compared to the control and high-intensity conditions, when there was no rest period prior to performing the jump test (Tsurubami et al., 2020).

An additional study, consisted of eleven male athletes, tested the effects of a high-intensity warm-up (80% of VO₂ Max) compared to a moderate-intensity warm-up (60% of VO₂ Max) on jump height performance in a cold climate; participant VO₂ Max was measured by a bicycle ergometer test. The results showed no difference between the two intensities on jump height performance (Chiba et al., 2022). Another study which involved ten male sprinters, assessed the effects of a high-intensity warm-up preceding a 100-m sprint competition. In this study, the participants performed a high (60-95% of self-estimated maximal speed) and low-(40% of self-estimated maximal speed) intensity warm-up. Both consisted of the same warmup, riding on a bicycle ergometer followed by the interventional warm-up which consisted of 60-meter sprints at different intensities. This study concluded that a high-intensity warm-up optimized the use of the phosphagen and glycolytic systems on a 100-meter sprint in competitive runners than a lower intensity warm-up, however both warm-ups elicited similar results on the 100-meter sprint (Park et al., 2021).

In the current investigation, there was potentially not a difference between conditions because of individual variability. For example, there could potentially be a difference in participant anaerobic capacity and endurance. It may be that those participants who were conditioned could have engaged in more fat metabolism than those who were unconditioned, who relied more on glycolysis for energy production (Haff & Triplett, 2015). Glycolysis produces lactate and hydrogen that causes lowering of blood pH and impairs muscular contraction (Haff & Triplett, 2015). Some research has explored the possible relationship between carbohydrate depletion and central and peripheral fatigue (Abbiss et al., 2008; Abbiss & Laursen, 2005; Meeusen et al., 2006). Therefore, when the unconditioned performed the 1-RM, their ATP stores could have been depleted, while the conditioned participants potentially had more glucose available for glycolysis due to previously using beta oxidation to generate energy (Haff & Triplett, 2015). An increase in muscle temperature also influences ATP production and blood flow to a given region (Bishop et al., 2001). However, some studies found that high-intensity warm-ups were found to impair performance by muscle fatigue due to overheating (Tsurubami et al., 2020; Yaicharoen et al., 2012), further conflicting with previous research and demonstrating why more research on this topic is necessary.

Although this is a novel study that contributes to the body of exercise science warm-up research, it is not without limitations. First, there was a small sample size (n=7) restricted to males 19-25 years of age. Second, further criteria included that the males had to have at least one year of resistance training experience and were able to perform a maximum conventional deadlift of least 1.75% of their body weight. Third, the participants were not separated into conditioned and unconditioned groups. Aerobic conditioning status may influence ability to generate force after a high-intensity functional training bout. Therefore, future studies should include a larger population, different age groups within the male and female population, and differentiate between conditioned and unconditioned participants to have a better understanding of

the effects of HIFT warm-ups across a wider sample size. Additional research must be conducted to discover optimal warm-up methods to elicit maximal muscle potential.

Conclusion

In conclusion, a general warm-up consisting of cycling on a cycle ergometer for 15 minutes at a moderate-intensity produced similar 1-RM, force output, and power output performance as a warm-up that consisted of 15 minutes of high-intensity functional training using a rowing ergometer, burpees, kettlebell swings, and air squats. The importance of studying different warm-up activities prior to attempting a 1-RM is imperative to understand the physiological effects of how to optimize maximal force generation which can be used by coaches and athletes across the world seeking to develop an edge over their competition to elicit success in their sport. Further research is necessary to discover the best warm-up preparation method that will elicit the greater performance of a 1-RM for athletes, coaches, and the general population to safely maximize potential strength.



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RESEARCH ARTICLES

Determining the Efficacy of Trigger Point Treatment Using Dry Needling When Compared to Manual Therapy

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Myofascial trigger points are irritable areas that can cause pain, motor dysfunction, and autonomic reactions in muscle tissue susceptible to excessive stress and muscle tension. Trigger points express themselves via involuntary muscle contractions, headaches, and restrictions in range of motion. Reported to be the most accepted intervention to treat neck pain, manual therapy is effective in that it causes an increase in blood flow, lengthening of shortened muscle fibers, and decrease in pain levels in the affected areas. Because of the repetitive pressure application from the therapist, manual therapy can lead therapists to develop degenerative wrist injuries. An alternative treatment for trigger points is dry needling, a technique for muscle stimulation using a needle to inactivate trigger points and promote tissue healing. The current research aimed to better understand the success and effects of using dry needling to treat trigger points in the trapezius muscle as compared to manual therapy. To do so, a meta-analysis was performed on peer-reviewed articles with publication dates from 2010 to 2022. Results indicate that both techniques are equally effective on a short-term basis and produce similar effects. The differences between manual therapy to dry needling involves the former one to increase reabsorption of lymphatic fluid, while the latter one has an influence on the neuromuscular junction and skin sympathetic response.

Introduction

Myofascial trigger points (MTrPs), also described as “knots” in the muscle tissue, are irritable areas that can cause pain, motor dysfunction, and autonomic reactions in the affected area. Trigger points typically create a painful sensation in the body area when pressure is applied and during motions like stretching. Myofascial trigger points usually develop in muscles that are exposed to stress, such as the trapezius muscle, and are often associated with neck pain (Campa-Moran et al., 2015).

De Meulemeester et al. (2016) hypothesized that trigger point development is due to an increase in muscle tension produced by sustained postures or repetitive tasks. Despite not stating when trigger points can be developed, the following signs and symptoms could indicate the presence of a trigger point in the trapezius muscle: taut and painful muscle, tension headache, neck pain, vertigo and limited range of motion in the neck and shoulder (Ziaieifar et al., 2014).

In order to choose the best approach in treating trigger points, it is important to understand the physiology as to why they occur. For a muscle to be used, muscle contractions must occur following the transmission of a nerve impulse permitted by the neurotransmitter acetylcholine. When muscles such as the trapezius are overused, acetylcholine is excessively secreted following

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multiple contractions of the muscle fibers (sarcomeres) and, as a result, muscle tension in the area will increase and trigger points will form (Abbaszadeh-Amirdehi et al., 2017).

Claimed to treat trigger points by solely inactivating them, Ziaifar et al. (2014) expressed that dry needling can do so by altering the presence of the biochemicals, lengthening the sarcomere, and promoting healing. Furthermore, understanding the therapeutic effects of dry needling in treating trigger points in the trapezius muscle is important for the following reasons: (1) it will increase our understanding of how trigger points work and how health care providers can approach them, and (2) it will expand the available treatment options that doctors can use to provide better care for their patients.

Research Questions

The purpose of this study is to compare the therapeutic effects of dry needling to manual therapy with an emphasis on the trapezius muscle. Trigger points are commonly developed in the trapezius muscle (Campa-Moran et al., 2015; Llamas-Ramos et al., 2014) due to its role in maintaining postures (Abbaszadeh-Amirdehi et al., 2017) and its tendency to receiving high loads of muscle tension.

Determining the effectiveness of manual therapy and dry needling is important because both modalities are increasingly becoming more popular to treat trigger points. Because manual therapy requires repetitive pressure, this form of therapy could lead to detrimental effects on the wrists of the therapists (Abu Taleb et al., 2016), inhibiting them from performing manual therapy in the future. Determining the clinical significance of dry needling will promote the availability of a second approach to trigger point treatment and help therapists avoid overusing their wrists.

A meta-analysis was performed on peer-reviewed articles with publication dates from 2010 to 2022 to better understand the effectiveness of dry needling. This study will address the following questions: (1) Is dry needling an effective modality for trigger point treatments? (2) Does dry needling have a greater significant difference than manual therapy? (3) Can dry needling be used to treat trigger points on a long-term basis (greater or equal to a month)? (4) What are the different effects of dry needling compared to manual therapy? (5) Which method should be used for treating trigger points?

Hypothesis

It is hypothesized that both modalities would lead to beneficial effects. The benefits of dry needling will outweigh those of manual therapy because dry needling has more access to the affected tissue and creates a more specific, localized treatment without putting undue stress on the therapist.

Literature Review

In order to better comprehend the changes that happen within one's body and to understand how to counteract these changes, the effects of the therapeutic modalities will be emphasized from a physiological perspective.

Manual Therapy

Used to treat conditions in the tissue of the fascia, manual therapy is done solely by using the hands of a therapist with the intention of reducing pain intensity and increasing range of motion (ROM) in the desired region. This form of therapy can take many forms (Webb & Rajendran, 2016), but for the purpose of this research, the primary focus will be on the following: myofascial release therapy, ischemic compressions, and pressure release therapy.

Myofascial Release Therapy

Myofascial release therapy (MFR) is applied to restore the length of the sarcomeres, as well as to reduce pain in the affected area. MFR can be applied directly or indirectly, and it involves the application of low pressure with long duration (120 - 300 sec). Direct MFR works directly over the fascia by using the knuckles, elbows, or another tool that applies force to the fascia. Indirect MFR involves carrying out a stretch until free movement is achieved (Ajimsha et al., 2014).

MFR is applied on the trigger point site and has the ability to restore the length of the sarcomeres and reduce pain in the body area. This form of manual therapy requires clear and constant communication between the patient and the therapist to determine the amount of pressure and duration of the therapy. Despite having an increasing usage to treat trigger points by physical therapists and clinical trials, doubts remain as there is little research available to support its efficacy. One reason for why there is a dearth of research in this area could be the fact that MFR is not evidence-based treatment, rather a “clinician-patient interaction” (Ajimsha et al., 2014).

Besides wanting to treat the fascia, therapists incorporate the use of myofascial release therapy to lengthen the shortened muscle, increase blood circulation in the area, and promote reabsorption of lymphatic fluid. Studies have found that when treating trigger points in the trapezius via MFR, pain and disability decrease and ROM is improved. Furthermore, it was established that myofascial release therapy is more effective than ischemic compressions, and that ischemic compression is more effective than pressure release therapy when treating trigger points (Desai & Jeswani, 2018).

Ischemic Compressions

Ischemic compressions (IC) require the therapist to apply direct pressure over the trigger point. The objective of IC requires the blocking and reduction of blood flow to the area so that, once the pressure is removed, a pain relief mechanism is created. This phenomenon is known as hyperemia and involves the increase in blood flow to the area (Alghadir et al., 2020).

The benefits behind ischemic compressions primarily involve pain relief induced by the resurgence of blood back to the area. IC relieves tension in the muscle after pressure is applied, followed by the lengthening of the sarcomeres. This leads to an increase in the pressure pain threshold and a decrease in

pain intensity. Furthermore, research has shown that IC decreases muscle tenderness and decreases neck pain in patients with trigger points found in the trapezius muscle (Alghadir et al., 2020).

When ischemic compressions between 30 to 60 seconds in length are applied without producing pain in regions with high tension, pressure pain threshold and active range of motion of the neck increase (Aguilera et al., 2009). Following ischemic compressions, ipsilateral and contralateral motions of the neck improve.

Additionally, researchers stated that when ischemic compressions are accompanied by other therapeutic techniques, the efficacy of the treatment to reduce neck pain and deactivate trigger points in the trapezius increases (Alghadir et al., 2020).

Pressure Release Therapy

Similarly, to ischemic compressions, pressure release therapy (PRT) involves the gradual increase in pressure in the area with trigger points until tissue resistance is encountered. For both forms, it is essential to maintain communication between the patient and clinician in order to provide proper treatment and prevent injuries from occurring.

Pressure Release Therapy works by removing tension in the tissue with trigger points by applying manual pressure. Pressure release therapy works in a similar fashion as IC, where the applied pressure produces a hypoxic state that is followed by an increase in perfusion, leading to a reduction in pain to the affected region. Pressure release therapy restores the length of the sarcomeres and inactivates the trigger point to restore muscle structure and function (Abu Taleb et al., 2016).

Dry Needling

Dry needling assists in the treatment for trigger points by inserting an acupuncture needle into the affected muscle, followed by an upward and downward movement designed to elicit a local twitch response (LTR). Researchers have yet to determine whether the production of the LTR is required as there is some ambivalence regarding the need of LTR for a treatment to be considered successful. Researchers state that dry needling delivers better results when a LTR is manifested (Kamali Hakim et al., 2017) and that this reflex leads to a decrease in pain due to a change in the concentration of sensitizing substances (Cerezo-Téllez et al., 2016).

Furthermore, Sacristán, Calvo-Lobo, Pecos-Martín, Fernández-Carnero and Alonso-Pérez (2022) found that immediately after dry needling is done eliciting a LTR, patients show an improvement in pain and function. However, after one week, pain levels, function and pressure pain threshold (PPT) did not improve.

According to the research articles used by De Meulemeester et al., 2016, dry needling appears to have a positive effect on pain intensity, pressure pain threshold (PPT), blood flow, range of motion (ROM), neuromuscular junction response and sympathetic skin reaction. In addition, these benefits appear to last a short time, most ranging from three days to two weeks.

Three body mechanisms should be evaluated to determine why dry needling could help in treating trigger points: mechanical, neurophysiological and chemical. Mechanically, dry needling is able to decrease pain because of the stimulation that the needle has on the type II fibers that block pain messages (Navaee et al., 2021). Neurophysiologically, A delta receptors are stimulated by the needle that leads to the stimulation of inhibitory neurons and activation of the inhibitory system that creates a reduction of pain. Chemically, dry needling changes the levels of biochemicals when needle stimulation is presented, manifesting a reduction of pain.

Dry needling serves to inactivate the trigger point by normalizing the chemical environment in the area and lengthening the sarcomere that was previously shortened. When emphasizing its effects on pain levels, research demonstrates that dry needling is an effective technique to increase pressure pain threshold and reduce pain (Abbaszadeh-Amirdehi et al., 2017). Additionally, when dry needling is performed to the trapezius muscle, this modality appears to increase blood flow to the area and restore range of motion. In addition it has been shown that the visual analogue scale (VAS) is a good method to measure improvements for pain levels in the trapezius muscle when dry needling is being used (Martín-Sacristán et al., 2022). Lastly, together with passive stretching in the trapezius muscle, dry needling appears to be even more effective in reducing pain and increasing pressure pain threshold, cervical range of motion, and increasing muscle strength (Cerezo-Téllez et al., 2016).

Advantages of Dry Needling

Abbaszadeh-Amirdehi et al. (2017) and Ziaefar et al. (2014) talk about the ability that dry needling has to activate the “endogenous opioid system” and produce the analgesic effect to decrease pain levels. Dry needling is also found to increase pressure pain threshold, increase local blood flow, and improve range of motion when performed on the trapezius muscle. Furthermore, dry needling the trapezius muscle was also found to decrease skin sympathetic reaction, a factor used to measure changes in electrical activity of the skin that is considered to be an indication of a dysfunction in the sympathetic nervous system (Abbaszadeh-Amirdehi et al., 2017).

Results revealed that the neuromuscular junction response decreases in patients with trigger points following dry needling. The neuromuscular junction region is linked to trigger point development due to the presence of acetylcholine that commands the muscle tissue to contract. Due to the needle's ability to alter biochemicals, dry needling decreases excess acetylcholine to impede the multiple muscle contractions that develop trigger points (Abbaszadeh-Amirdehi et al., 2017).

Disadvantages of Dry Needling

Due to the nature of the intervention, the use of dry needling can be a painful procedure and, if the patient dislikes needles, dry needling may not be the ideal approach.

Furthermore, adverse effects presented by Vulsfons and Kalichman (2012) include post-needling soreness, hemorrhages at the needling site, syncopal responses, and acute cervical epidural hematoma.

A common side effect reported immediately after a session of dry needling is muscle soreness. Because post-needle soreness is a factor that can be experienced for up to 48 hours, assessing pain intensity can be a limiting factor. In addition, this procedure may lead to inflammation in the area and patients should not engage in any form of physical activity to avoid further injuries.

Results

As previously mentioned, myofascial trigger points are treated by restoring the length of the sarcomeres. Common interventions to do so include dry needling and trigger point manual therapy, focusing on pain intensity and pressure pain threshold. Research shows that both techniques lead to a decrease in pain intensity and muscle stiffness, and an improvement in function and range of motion. (Abbaszadeh-Amirdehi et al., 2017; Campa-Moran et al., 2015; De Meulemeester et al., 2016; Lew et al., 2021).

When compared to manual therapy, dry needling appears to be as effective although sources have found that dry needling might be better for increasing pressure pain threshold. In terms of pain levels, dry needling and myofascial release therapy decrease pain sensitivity via hypoalgesic effect. This phenomenon is produced when the type II muscle fibers and A delta fibers are stimulated by dry needling. Manual therapy does so by increasing blood flow to the area once the pressure is removed from the tissue. However, when examining size effects regarding pressure pain threshold, patients who received treatment with dry needling appeared to have a stronger clinical effect in comparison to those who had myofascial release therapy (Stieven et al., 2021).

On a short-term basis, both methods produce similar results including neck function improvement, increased pressure pain threshold, muscle elasticity, and decreased muscle stiffness. These effects were seen to be more beneficial when participants underwent dry needling rather than manual therapy (Llamas-Ramos et al., 2014). Additionally, according to Lew et al., both methods are equally effective and appropriate for treating pain and restoring function (2021).

Despite observing an improvement in neck function in the long term, values did not meet the neck disability index (NDI) for a minimal clinically important difference (De Meulemeester et al., 2016). NDI dictates that for values to be considered significant, there must be a reduction of 14 points (De Meulemeester et al., 2016). DeMeulemeester, et al. (2016) determined the reduction to be 3.43 points. Furthermore, Campa-Moran et al. (2015) found that in terms of neck pain and ROM, manual therapy showed clinical significant results on both variables, while dry needling only on pain levels.

Discussion

The development of trigger points in the trapezius muscle were reviewed because it is classified as a postural muscle and thus, susceptible to muscle tension and the development of trigger points. The included modalities were chosen to be assessed because both are common techniques used in the clinic to deactivate trigger points.

In proportion to the reviewed literature, on a short-term basis both techniques provide similar outcomes such as decrease in pain intensity and increase in pressure pain threshold, as well as improvement in range of motion and increase in blood perfusion.

Five research articles were used to compare the efficacy of both techniques in treating trigger points in the trapezius muscle. Of the five articles, two found both techniques to be equally effective, two articles found that dry needling produces greater effects in increasing pressure pain threshold than that of manual therapy, and one found that manual therapy has greater effects than dry needling for neck pain and range of motion.

Stating that both modalities are equally effective, Lew et al. (2021) found that dry needling (DN) and MT produce similar results when assessing pain and function. It was also found that they both produce improvements in the short term (three days to two weeks), considering that the observed improvements in a long-term (longer than thirty days) basis did not meet the minimal clinically important difference (De Meulemeester et al., 2016).

When assessing pressure pain threshold, DN produces greater improvements on PPT than myofascial release therapy (Stieven et al., 2021), a statement that the paper from Llamas-Ramos et al. (2014) agrees with, but the latter one added that DN and MT produce similar results for treating pain and function.

In favor of manual therapy, Campa-Moran et al. (2015) found that neck pain and disability are clinically improved by MT and that DN only produces clinical significant results regarding neck pain. [Table 1](#) summarizes the mentioned findings in appendix A. Furthermore, an analysis of the current research demonstrates that multifaceted treatments appear to be the most effective, this includes a treatment program with a portion of exercise, dry needling, manual therapy, and other treatment options. The literature that was previously reviewed found that some modalities can work synergistically, such as DN and ischemic compressions when they are accompanied by passive stretching.

Conclusion

The purpose of this paper was to compare the therapeutic effects of dry needling to manual therapy, and to address the following questions: (1) Is dry needling an effective modality for trigger point treatments? (2) Does dry needling have a greater significant difference than manual therapy? (3) Can dry needling be used to treat trigger points on a long-term basis? (4) What are the different effects of dry needling compared to manual therapy? (5) Which method should be used for treating trigger points?

In regard to question one, it was determined that dry needling is an effective trigger point treatment, as it was stated to be able to restore the length of the sarcomeres and reduce pain intensity. Addressing question two, it was found that dry needling has a greater effect on increasing pressure pain threshold when compared to manual therapy. Regarding the long-term effects (question three), there appears to be potential for an improvement in neck function. However, because the observed improvement in neck function did not result in a reduction of 12 points (using the NDI), it was not considered clinically significant.

Acknowledging the different therapeutic effects for question four, it was found that dry needling has an influence in the neuromuscular junction and skin sympathetic response. The former is due to dry needling decreasing acetylcholine release, while the latter one results from decreasing the amplitude of skin sympathetic response. In addition, dry needling and manual therapy treat pain levels by different methods. Dry needling is able to reduce pain because of stimulation of both type II muscle fibers and A delta fibers that block the transmission of pain messages, while manual therapy produces an analgesic effect by increasing blood flow to the affected area after being diminished by pressure.

With respect to question five, because each person responds differently to treatments, it is important to carry out a series of trials to determine the best treatment approach for the patient. In addition, patient preferences must be taken into account. If the patient dislikes needles, then dry needling is probably not the most effective option. If the patient does not have a preference and the therapist has healthy wrists, either modality is an effective treatment option to treat pain from trigger points.

Further Research

In order to promote better rehabilitation programs through exercise and education, research should emphasize the outcomes from exercise in terms of quality of life, physical wellness, and the rate at which trigger points form, as well as the pressure pain threshold on the trapezius muscle. More specifically, research should focus on the outcomes of specific exercises on trigger point formation in the trapezius muscle. If we are able to comprehend how exercise will improve our bodies responses to pain and injuries, we should be able to manipulate the cheapest modality (exercise) and make rehabilitation accessible to everyone. Furthermore, an emphasis should also be placed on which modality has a greater significant difference for pressure pain threshold and increase in function.

Previous research determined that some therapeutic modalities can act in a synergistic manner, such as IC followed by stretching, dry needling, and performing IC with cupping therapy. Further research emphasizing the potential of combining modalities that behave synergistically is recommended. It is hoped that when combined, using more than one treatment would provide a multifaceted approach towards trigger point treatment and allow therapists to have more treatment options available for patients.

Finally, injuries and conditions related to biomechanics should not be primarily treated with therapeutic modalities that include heat, ice, ultrasound, and myofascial techniques, as they function to treat pain and make the patient feel good. These modalities provide short-term solutions by increasing blood flow and producing what many researchers refer to as “analgesia” or “analgesic effect” that reduces pain. However, the source of the problem remains to be assessed. Desai et al. (2018) stated that the trapezius is a postural muscle that is susceptible to overuse. If the trapezius muscle is being overused because of improper biomechanics and is treated with one of the modalities listed above, chances are that the patient will continue to experience trigger point pain because the true cause of the pain has yet to be assessed. One would predict that the biomechanical issue can be accurately treated through proper education and prescribed exercises.

Limitations

The present research showed limitations in the body regions where trigger point therapy was given. Results may vary if dry needling or manual therapy is performed on a different area. Further research should emphasize the effects and clinical significance of dry needling and manual therapy on body regions that are used for activities of daily living, such as the shoulder muscles, pelvic floor, and different back muscles. Additionally, most of the information gathered focuses on the short-term effects of dry needling and manual therapy with little to no information on the long-term effects. Due to the different opinions that therapists and researchers have on the importance of the local twitch response (LTR), research should also compare the different effects with and without the presence of the LTR.



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Appendix

Table 1. Finding differences between dry needling and manual therapy.

Article	Conclusion	Additional Notes
Stieven, Ferreira, G. E., de Araújo, F. X., Angellos, R. F., Silva, M. F., and da Rosa, L. (2021). Immediate Effects of Dry Needling and Myofascial Release on Local and Widespread Pressure Pain Threshold in Individuals with Active Upper Trapezius Trigger Points: A Randomized Clinical Trial.	DN produced a greater increase in PPT than Myofascial release.	MFR reported superior results when compared to a placebo.
Lew, Kim, J., and Nair, P. (2021). Comparison of dry needling and trigger point manual therapy in patients with neck and upper back myofascial pain syndrome: a systematic review and meta-analysis.	Neither intervention appeared to be superior to the other.	N/A
Llamas-Ramos, R., Pecos-Martín, D., Gallego-Izquierdo, T., Llamas-Ramos, I., Plaza-Manzano, G., Ortega-Santiago, R., Cleland, J., & Fernández-de-Las-Peñas, C. (2014). Comparison of the short-term outcomes between trigger point dry needling and trigger point manual therapy for the management of chronic mechanical neck pain: a randomized clinical trial.	DN produced greater results than MT in terms of PPT. DN and MT result in similar outcomes in terms of decreasing pain levels, and improving ROM and function.	N/A
De Meulemeester, Castelein, B., Coppieters, I., Barbe, T., Cools, A., & Cagnie, B. (2016). Comparing Trigger Point Dry Needling and Manual Pressure Technique for the Management of Myofascial Neck/Shoulder Pain: A Randomized Clinical Trial.	DN was found to be no more effective than MP	Significant difference observed for long-term benefits was lower than the clinical important difference.
Campa-Moran, Rey-Gudin, E., Fernández-Carnero, J., Paris-Alemany, A., Gil-Martinez, A., Lerma Lara, S., Prieto-Baquero, A., Alonso-Perez, J. L., & La Touche, R. (2015). Comparison of Dry Needling versus Orthopedic Manual Therapy in Patients with Myofascial Chronic Neck	Manual therapy appeared to produce greater results for pain and disability than dry needling.	Manual therapy appeared to produce greater effects on pain intensity when compared to dry needling.
Pain: A Single-Blind, Randomized Pilot Study.		Both techniques produce clinical significant results for neck pain. Manual therapy produced clinical significant results for disability.

RESEARCH ARTICLES

Probing the Role of the Ventral Hippocampus to Nucleus Accumbens Pathway in Individual Differences in Appetitive Learning

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A critical issue in substance abuse research is why some individuals can actively use addictive drugs and quit with relative ease, while others may only try a small dose before becoming a life-long dependent (Fitzpatrick et al., 2016). The use of designer receptors exclusively activated by designer drugs (DREADDs) may shed light on individual differences in learning behaviors and why some individuals seem to be more prone to addiction and relapse than others. In this preliminary study, an *in vivo* dual-vector approach was used to bilaterally inject Cre recombinase into the nucleus accumbens (NAc) and an excitatory Cre-dependent, G protein-coupled DREADD into the ventral hippocampus (vHPC) of rats. Five weeks after surgery, clozapine-N-oxide (CNO) was injected intraperitoneally to selectively activate this pathway for six days. Rats were then given one day of cross-treatment followed by conditioned reinforcement. These procedures allowed determination of whether activation of the vHPC-NAc projection affects acquisition and/or expression of Pavlovian conditioned approach (PCA) behavior. There were no statistically significant differences amongst treatment groups. However, trends in the data support a differential role of the vHPC-NAc pathway in sign- and goal-tracking behaviors, suggesting a need for further investigation using larger sample sizes to determine the importance of this pathway. Although this study found no statistically significant evidence for the role of the vHPC-NAc pathway in PCA behaviors, current and future findings may add to an understanding of how learning and neurological activity may play a role in behaviors associated with addiction in human beings.

INTRODUCTION

Addiction has become the leading cause of death, morbidity, and lost productivity (Chen et al., 2003; Florence et al., 2021; Fuhrmann-Berger, 2018). In the United States alone, there are nearly 21 million people currently struggling with at least one addiction (Yerby & Hampton, 2021). According to the Centers for Disease Control and Prevention (CDC, 2022), this substance use has led to 93,000 overdose deaths in 2020. Addiction has been a public health concern in the United States for decades, leading to abundant addiction research regarding its etiology and underlying mechanisms.

Individual Differences in Addiction Development

As the number of individuals suffering from addiction increases, addiction research has become critical in the scientific community. Even more concerning than the sheer number of individuals with addiction, however, is how some individuals can actively use addictive drugs and quit or cut down with relative ease, while others may only try a small dose before becoming a life-long dependent (Fitzpatrick et al., 2016). Research has begun to consider that some individuals may respond emotionally to environmental cues, creating

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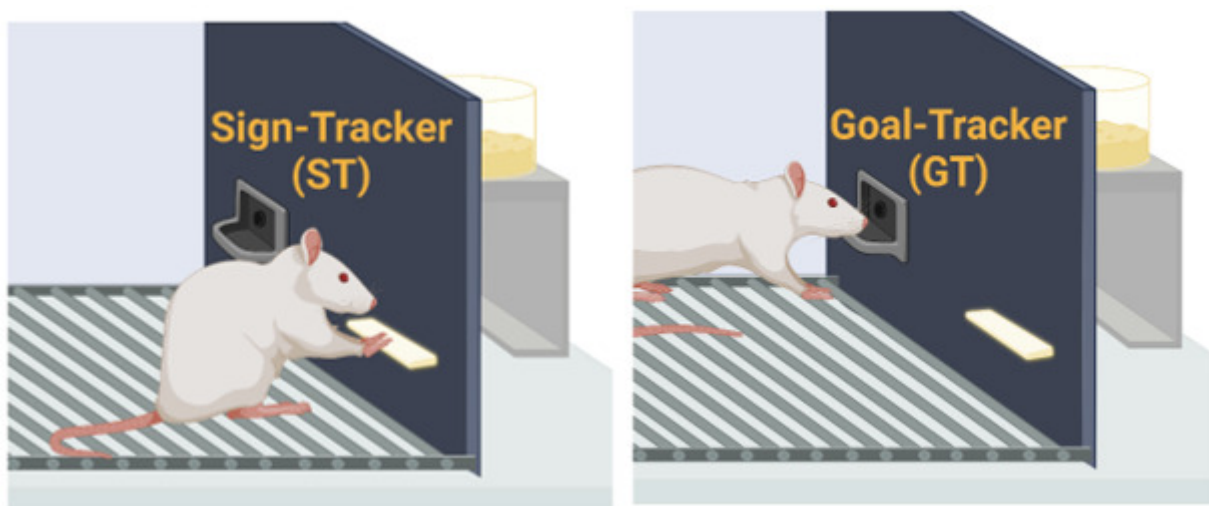


Figure 1. STs are first attracted to the illuminated lever before accepting the food reward. GTs, however, show no interest in the lever, going only to the food dispensing area.

emotionally salient events that motivate behavior (Meyer et al., 2012; Morrow et al., 2011; Robinson et al., 2014). Through the use of animal models, it is possible to venture into the study of these questions.

Pavlovian Conditioned Approach: Sign- & Goal-Tracking

In order to use animals to model addiction, rats are often classified using a Pavlovian conditioned approach (PCA) procedure. For PCA, rats are placed in a controlled environment in which an illuminated, retractable lever, i.e., the conditioned stimulus (CS), is presented for a few seconds. This is then followed by a food reward, i.e., the unconditioned stimulus (US). Although there is no need for the rats to engage with the lever in any way in order to receive the food reward, they learn to associate the presence of the lever with the acquisition of a reward. As PCA progresses, two learning behaviors are observed as the association between these two stimuli is made. Some rats, referred to as sign trackers (ST), seem to treat the lever itself as an incentive—sniffing, gnawing, and scratching the lever when presented—as well as accepting the food reward. Goal trackers (GT), on the other hand, are observed to have no interest in the lever itself but prepare for the food reward upon the lever's presentation. This paradigm allows for the researcher to measure incentive salience. Incentive salience refers to the motivation towards a cue as it has become an attractive, desired stimulus (Beckmann & Bardo, 2012; Berridge, 1996; Dickson et al., 2015; Pitchers et al., 2015). STs are observed to become attracted to reward-paired cues in which the cues seem to become rewarding in themselves, attributing incentive salience to the cue. GTs, on the other hand, seem to learn reward-cue associations, but treat the cues as mere predictors without incentive properties. It is important to note that both STs and GTs accept the food reward, and both types learn the conditioned response at the same rate (Kuhn et al., 2018). However, the interest in the lever-cue and where incentive salience is attributed is the difference between these two learning types ([Figure 1](#)).

Sign Trackers & Goal Trackers: Addiction

Several observations seem to indicate that STs are more prone to addiction-like behaviors than GTs. In studies that focus on drug seeking behavior, STs are observed to show greater cue-induced drug-seeking behaviors (Saunders & Robinson, 2011). STs are also found to have more susceptibility to the cognitive-motivational learning of drug-seeking behaviors, while having a limited understanding of contextual cues (Flagel et al., 2021). In terms of drug use, exposure to stimuli previously associated with a drug may cause drug-seeking behaviors in STs, making them more prone to addiction. STs have been observed in various studies to have more cue-driven motivation for food, cocaine, opioid, and nicotine, supporting the implications of this type of response for the etiology of addiction (Flagel et al., 2010; Nasser et al., 2015; Robinson & Flagel, 2009; Saunders et al., 2013; Saunders & Robinson, 2010, 2013; Yager et al., 2015; Yager & Robinson, 2010). Similarly, these sign-tracking behaviors seem to be long-lasting and resilient, suggesting a resistance to extinction and a greater inclination for relapse (Colaizzi et al., 2020; Flagel et al., 2021; Tomie et al., 2008). Finally, sign-tracking animals are prone to spontaneous recovery as well as rapid reacquisition of sign-tracking behaviors even when provided extensive drug-taking extinction training (Tomie et al., 2008, 2016).

Sign-Tracking in Humans

The behaviors of sign-tracking and goal-tracking may look similar for human beings. For example, Garofalo and di Pellegrino (2015) trained human participants to associate a previously neutral visual cue (CS) with a monetary reward (US), tracking the participants' eye movement towards the sign (CS) or the goal (US). This determined whether an individual was categorized as a ST or GT. STs had a greater likelihood of responding to the CS even after the US was unavailable (Colaizzi et al., 2020). In other studies of goal-tracking and sign-tracking human beings, participants were trained to associate a visual distractor cue to a reward. Once trained, if participants looked towards the distractor, the reward was omitted, requiring the participant to suppress their urge to look at the cue in order to receive the reward. Despite this expectation, participants frequently looked towards the distractors, particularly in cases where the distractor was related to a high-value reward (Colaizzi et al., 2020; Failing et al., 2015; Le Pelley et al., 2015; Pearson et al., 2015, 2016; Studies such as these indicate the parallels of rat models and human behaviors, highlighting the issue of impulse control in particular.

PREVIOUS EXPERIMENTS

Self-administration of Cocaine

In studies such as Saunders and Robinson (2011), researchers sought to better understand the cues in the environment associated with addiction. In these experiments, groups of rats were trained in a PCA environment to associate the retractable lever cue with food reward, allowing for determination of STs and GTs phenotypes. From there, a self-administration experiment was

conducted. Both STs and GTs were given an intravenous catheter surgery to provide an administration port for cocaine. In the self-administration box, there was both an active and inactive nose poke. If a rat's nose poked in the PCA active nose port, an intravenous infusion of cocaine was administered. The rats were then placed on a schedule in which the number of nose pokes needed to receive the cocaine increased after each infusion. Through this schedule, ST rats were found to work harder for the administration of cocaine. Finally, after the use of an extinction procedure, rats were tested for cocaine-induced reinstatement, revealing that STs were more motivated to receive the cocaine and more readily reinstated than GTs. These findings support the conclusion that STs are more prone to drug-seeking behaviors in general as well as have a greater inclination for reinstatement of drug-seeking behaviors, translating to a greater inclination of relapse. Studies such as these highlight the importance of sign- and goal-tracking behaviors in this addiction research.

Ventral Hippocampus, Nucleus Accumbens, & Dopamine

As previous research observed the behaviors of PCA and self-administration, subsequent research considered what pathways within the brain may have been involved in this process. In a 2016 experiment, Fitzpatrick et al. considered how the hippocampus, as well as its subregions, may be involved in the acquisition and expression of sign-tracking and goal-tracking behaviors. The hippocampus is associated with a variety of memory types such as spatial navigation and encoding of contextual information (Tomie & Morrow, 2018). This may play an important role in addiction and the environmental aspects of usage. Also of interest was the increased release of dopamine for STs in the nucleus accumbens (NAc). Previous research has found that the ventral hippocampus (vHPC) is critical for dopaminergic activity in the NAc, and lesions in the vHPC region decrease dopamine levels within the NAc (Fitzpatrick et al., 2016; Lipska et al., 1991, 1992). Similarly, drugs of abuse are known to elevate dopamine transmission, and many individuals with addiction predisposition have been found to have relatively high dopaminergic activity in general (Hyman et al., 2006; Morrow & Flagel, 2016). Previous research has reinforced this, finding that lesions in the vHPC may cause a decrease in dopamine levels in the NAc which suggests that because STs release more dopamine in the NAc, sign-tracking behaviors are dopamine-dependent (Fitzpatrick et al., 2016). In order to score ST versus GT, Fitzpatrick et al. (2016) used a PCA index score that averaged responses, incorporating the number, latency, and probability of lever presses and magazine entries. Using this index, Fitzpatrick et al. determined that lesions of the vHPC yielded a decrease in sign-tracking behaviors and an increase in goal-tracking behaviors. Similarly, lesions of the vHPC were found to prevent learning of the sign-tracking response, which was associated with a decrease in the concentration of dopamine metabolite, homovanillic acid, in the NAc. These findings suggest that the vHPC and NAc play an important role in the acquisition of sign-tracking behaviors.

It is possible, then, that increased vHPC activity may be related to regulation of dopamine in the NAc of STs and is a critical component to the motivation involved in these behaviors (Fitzpatrick et al., 2016). Therefore, the vHPC and NAc pathway is considered to be involved in the acquisition of sign-tracking behavior due to its involvement in dopamine and motivation processes (Chang et al., 2012). With these findings in mind, we sought to further investigate how manipulation of the activity within this area of the brain may influence sign- and goal-tracking behaviors.

DREADDs

Chemogenetics are an engineered method for researchers to interact with the molecular chemicals of the brain (Forkmann & Dangelmayr, 1980; Roth, 2016; Sternson & Roth, 2014; Strobel, 1998). Of the many classes of genetically engineered proteins, designer receptors exclusively activated by designer drugs (DREADDs), have become one of the most widely used methods for manipulating neuronal activity (Roth, 2016). DREADDs are G protein-coupled muscarinic receptors that have been genetically modified to respond specifically to particular compounds foreign to the body. A virus that will cause DREADD proteins to be expressed is injected into a specific brain region to allow experimenters to excite or inhibit the downstream pathway. For example, an hM3Dq DREADD, the excitatory DREADD used in the present experiments, is typically used to excite firing within a particular neuronal pathway. This is strictly activated by clozapine-N-oxide (CNO), a synthetic compound that is not naturally produced by the body (Morrow & Flagel, 2016; Roth, 2016). Once CNO is injected, there is an increase in neuronal excitability and firing for approximately two hours (Alexander et al., 2009; Cheng & Wang, 2019).

Cre Recombinase

Cre recombinase is a tyrosine recombinase enzyme derived from the P1 bacteriophage and is used for its site-specific recombination of DNA (Van Duyn, 2015). A Cre-dependent DREADD, then, will only express in the presence of Cre, allowing for the pathway of interest to be the only pathway in which the DREADD will be expressed. This is done by injecting a DREADD-expressing virus into the input region and injecting a retrograde Cre-expressing virus into the output region to selectively activate this pathway. For this study, this specification allows for targeting of the vHPC-NAc pathway by requiring that Cre be present in order for the DREADD to be activated, preventing a generalized expression.

Hypothesis

We anticipated seeing an increase in sign-tracking behavior in response to this excitatory DREADD due to the theorized role of increased activity within the vHPC-NAc pathway leading to an increase in sign-tracking behaviors. A previous inhibitory experiment in this lab conducted by Cristina María-Ríos found no significant differences in the lever presses and food-cup entry number between treatment groups (Unpublished Data; [Figure 2](#)). The findings suggest

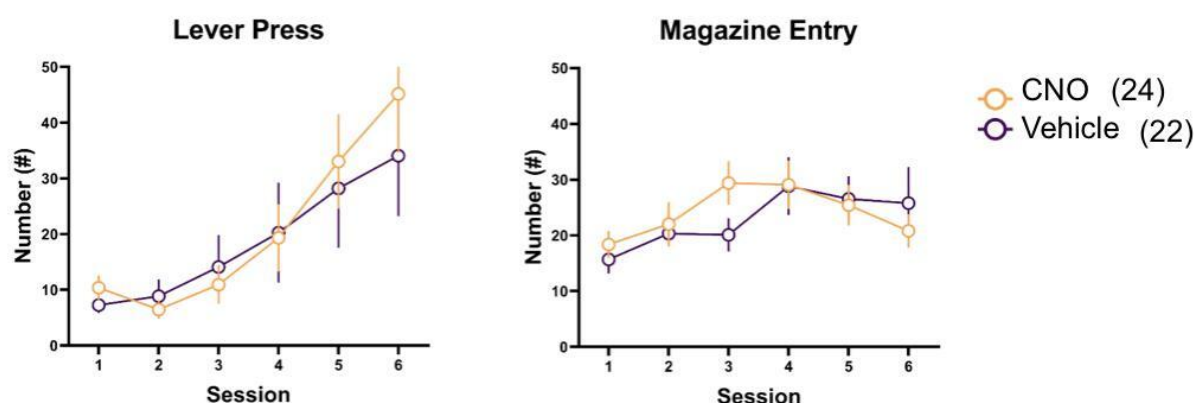


Figure 2. Inhibition of the vHPC does not significantly affect the acquisition of sign- and goal-tracking behaviors.

that the vHPC to NAc pathway may not be necessary for the acquisition of goal- and sign-tracking behaviors. However, there may be a more complex and selective role for the vHPC to NAc pathway in the performance of sign-tracking behaviors. Given the findings of Fitzpatrick et al. (2016) in particular, we hypothesized that the excitatory DREADD would cause an increase in sign-tracking behaviors.

Review

From the findings of the research studies discussed, rat models suggest that STs may be more likely to become addicted as well as more prone to relapse. These rat behaviors parallel human behaviors, allowing for rat models to possibly provide insight into addiction behaviors in human beings. Considering the parallel between animal and human behaviors, it can be assumed that for some individuals with a substance use disorder, cues previously associated with a drug may cause craving and relapse (Colaizzi et al., 2020; Grüsser et al., 2004). The findings of these studies then led to the interest in the brain pathways to better understand the causes of these behaviors. Previous research has found that the vHPC to NAc pathway specifically plays an important role in the acquisition of sign-tracking behaviors due to its involvement in dopamine and motivation processes (Chang et al., 2012). Given these findings, this experiment was designed to use DREADD manipulations to test the hypothesis that the vHPC-NAc pathway is involved in sign-tracking behaviors. This evidence could provide insight into the neurological process of addiction in human beings.

METHODS

DREADDs and Cre

In this study, a viral vector was used to deliver a Cre-dependent DREADD into the vHPC and Cre recombinase into the NAc. Following injection, the DREADD gene is taken up by the cells and integrated into the genome in order to produce the desired receptor. As a result, the vHPC to NAc pathway is specifically targeted in the experiment.

Animals

The participants for this study originally included 32 Sprague-Dawley rats (16 females and 16 males). These rats were approximately 7 to 8 weeks old and were purchased from Charles River Breeding Laboratories. They were put on a 12:12- dark/light cycle (lights on 7pm). Food was available ad libitum for the entirety of the experiment. Following surgery, the study included male (n=16) and female (n=15) rats, one of the rats having been excluded from PCA due to an adverse reaction to CNO.

Surgery & Recovery

Through stereotaxic surgery, an *in vivo* dual-vector approach was used to bilaterally inject Cre recombinase [pENN.AAVrg.hSyn.HI.eG FP-Cre.WPRE .SV40 (Retrograde)] into the NAc (mm from Bregma: 0.5 mL; -7.8 DV, \pm 0.8 ML, 1.7 AP) and an excitatory Cre-dependent, G protein-coupled DREADD (pAAV-hSyn-DIO-hM3D(Gq)-mCherry) into the vHPC (mm from Bregma: 1.0 mL; -8.4 DV, \pm 4.8 ML, -6.0 AP) at a rate of 0.1 μ L/min, to selectively target the vHPC–NAc projection. Twenty-six rats were given this surgery, and the other six received a control surgery in which Cre was injected into the NAc, while an mCherry control (did not contain DREADD; pAAV-hSyn-mCherry) was injected into the vHPC. While undergoing surgery, each rat was subjected to 1% to 5% of isoflurane as well as an injection of carprofen (5mg/kg S.C.). For two days post-operation, each rat was again injected with carprofen for pain relief. The rats were then given a period of five weeks prior to undergoing the PCA in order to recover from the surgery and for the DREADD gene to express within the pathway.

Pavlovian Conditioned Approach (PCA): Machinery

The Pavlovian conditioning chamber consisted of 24.1 cm width x 20.5 cm depth x 29.2 cm height walls, a fan for ventilation and white noise, a pellet magazine, a retractable lever, and a red house light. During the experiment, the retractable lever would pop out and be illuminated, followed by the delivery of a banana-flavored, unsweetened food pellet. This chamber also included metal bars serving as a floor for the rats to stand on.

PCA: Procedure

Prior to the experiment, the rats were familiarized with the banana-flavored food pellets in their home cages. After five weeks post-operation, rats were placed into the chambers and were pre-trained to the lever and food reward pairing process for one day. Pre-training consisted of 25 unsignaled deliveries of a banana-flavored pellet. The intertrial interval (ITI) ranged from 5 to 60 seconds. The lever-food pairings were delivered on a variable time schedule, varying randomly from 5 to 60 seconds throughout the session. Then, during the six PCA rounds, each rat was injected with clozapine-N-oxide (CNO; 3mg/ kg, dissolved in 6% DMSO) or vehicle (6% DMSO) intraperitoneally 25 minutes before being placed in the PCA chamber. Six control surgery and fourteen DREADD surgery rats were given CNO, while twelve DREADD surgery rats were given the vehicle injection. Each PCA session consisted of 25

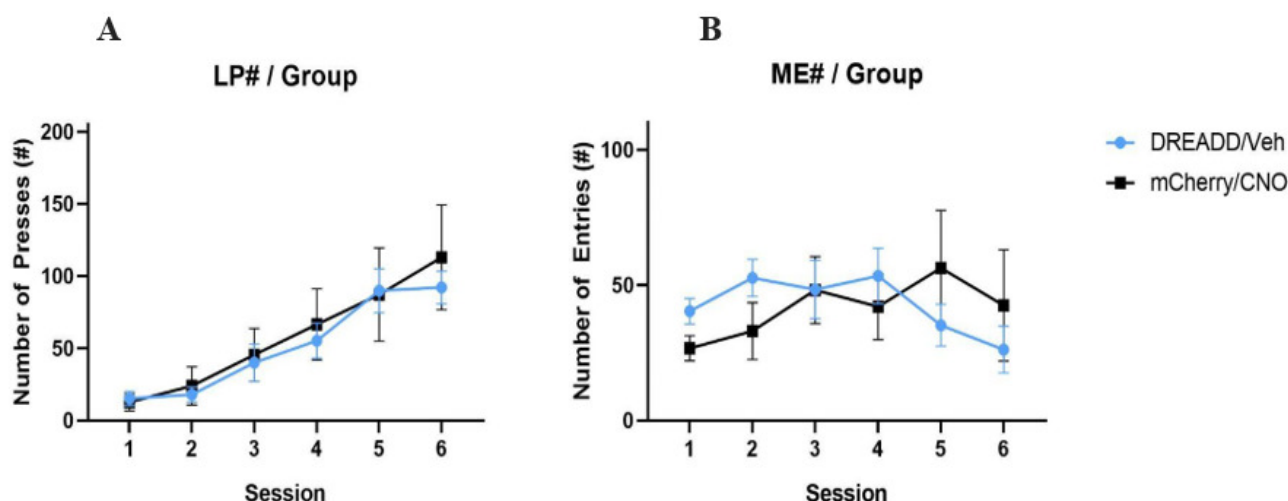


Figure 3. No statistically significant differences in behavior for lever press number or magazine entry number between mCherry/CNO (N=6) and DREADD/Vehicle groups (N=12).

presentations of the retractable lever that remained extended for 10 seconds and 25 deliveries of the banana-flavored pellets. The ITI, in this case, ranged from 30 to 60 seconds. All rats consumed the entirety of the food pellets administered. All animals were then classified according to their conditioned responses towards the lever cue (ST) or towards the magazine (GT). The rats were then given a day for a crossover treatment test to measure expression of the learned behavior (expression), followed by conditioned reinforcement.

Measures

PCA behavior was given an index score using the average of response bias $[(\text{lever presses number} - \text{magazine entry number}) / (\text{lever presses number} + \text{magazine entry number})]$, latency score $[(\text{magazine entry latency} - \text{lever press latency}) / \text{time CS is present}]$, and probability difference $[(\text{lever press probability} - \text{magazine entry probability}) / 100]$ for lever presses and magazine entries. The index score for behavior ranged from a +1.0 (absolute ST) to -1.0 (absolute GT), with 0 being no bias. An index score of ≥ 0.5 indicated a ST, an index score of ≤ -0.5 indicated a GT, and $-0.5 < \text{score} < 0.5$ indicated an intermediate (IR) rat.

RESULTS

Effect of CNO Drug on Behavior

Previous studies have discussed a concern that CNO may metabolize into clozapine, causing an effect on the brain (Gomez et al., 2017). In order to control this, a control surgery was used with CNO injections to ensure CNO would not influence other areas of the brain. The findings concluded that injections of CNO did not significantly alter behavior in control rats (mCherry/CNO) for lever press number (Figure 3A; 2-way ANOVA; effect of group; $F(1,15)=0.1279$, $p=0.7256$) or magazine entry number (Figure 3B; 2-way ANOVA; effect of group; $F(1,15)=0.01281$, $p=0.9114$).

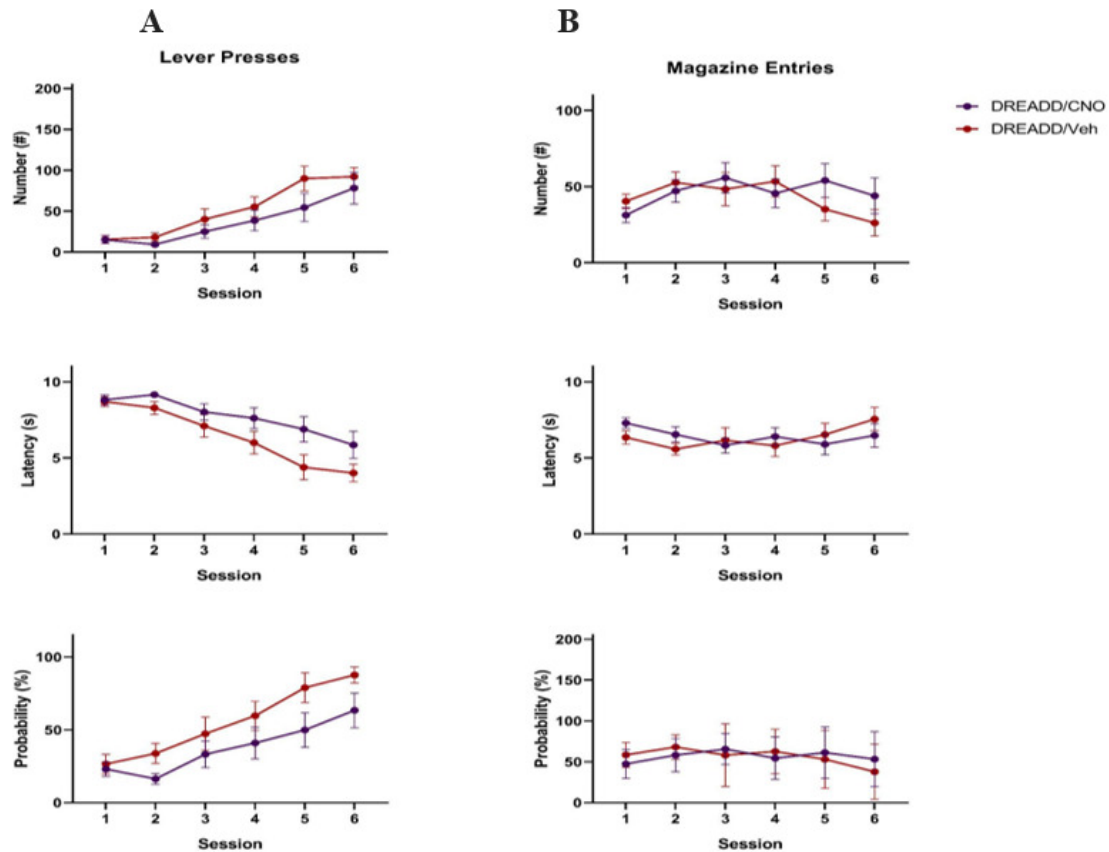


Figure 4. No statistically significant differences amongst treatment groups for lever press numbers, latency and probability in comparison to magazine entry numbers, latency, and probability.

Effects on Acquisition

At the end of the acquisition period, the pool of rats consisted of 4 ST, 4 GT, and 5 IR in the DREADD/CNO group; 5 ST, 0 GT, and 6 IR in the DREADD/vehicle group; and 2 ST, 1 GT, and 3 IR in the control group. Data showed no statistically significant differences amongst treatment groups for lever press numbers (Figure 4A; 2-way ANOVA; effect of treatment; $F(1,22)=1.508$, $p=0.2325$), latency (Figure 4A; 2-way ANOVA; effect of treatment; $F(1,22)=3.523$, $p=0.0738$), and probability (Figure 4A; 2-way ANOVA; effect of treatment; $F(1,22)=2.964$, $p=0.0992$) in comparison to magazine entry numbers (Figure 4B; 2-way ANOVA; effect of treatment; $F(1,22)=0.1738$, $p=0.6782$), latency (Figure 4B; 2-way ANOVA; effect of treatment; $F(1,22)=0.01610$, $p=0.9002$), and probability (Figure 4B; 2-way ANOVA; effect of treatment; $F(1,22)=0.00186$, $p=0.9660$) across all training days. These findings concluded that DREADD/CNO excitation of the vHPC-NAc pathway had no statistically significant effect on acquisition of sign- or goal-tracking. However, although there were no statistically significant effects, data suggested that the DREADD/CNO ($N=14$) group tends to sign-track less frequently than the DREADD/vehicle ($N=12$) group. This suggests that there may be a difference in sign-tracking behaviors, requiring further investigation using an increased sample size to determine significant effects.

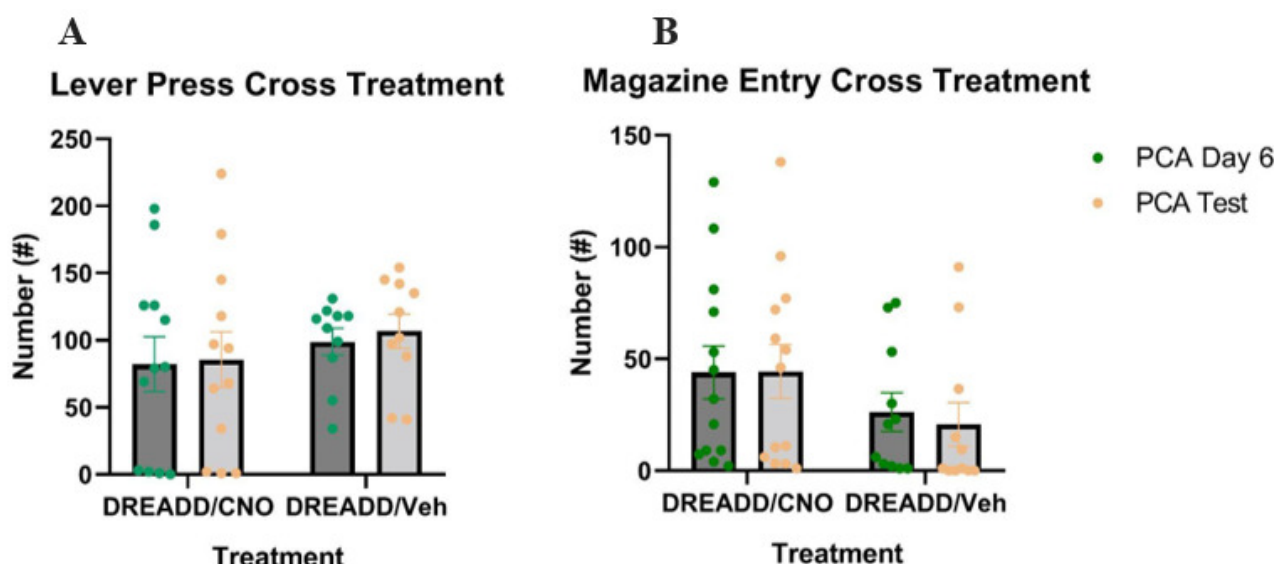


Figure 5. No statistically significant differences in sign-tracking lever presses or goal-tracking magazine entries for either the DREADD/CNO or the DREADD/Vehicle group.

Effects on Expression

Following PCA testing, a crossover treatment was used to determine expression. After learning sign- and goal-tracking behaviors, we wanted to test whether the rats would express the learned behavior differently in response to different treatments. DREADD/CNO rats would then receive a vehicle and DREADD/Vehicle would then receive CNO. Results revealed no significant differences in sign-tracking lever presses (Figure 5A; Paired t-test; effect of treatment; $t(11)=0.5525$, $p=0.5916$) and goal-tracking magazine entries (Figure 5B; Paired t-test; effect of treatment; $t(12)=0.1046$, $p=0.9184$) behaviors in response to the cross-treatment when DREADD/CNO received vehicle. In addition, there were no statistically significant differences in sign-tracking lever presses (Figure 5A; Paired t-test; effect of treatment; $t(9)=1.428$, $p=0.1869$) or goal-tracking magazine entries (Figure 5B; Paired t-test, effect of treatment; $t(10)=0.6970$, $p=0.5017$) when DREADD/Vehicle received CNO. These findings suggest that expression of sign- and goal-tracking behavior is not affected by different treatments following acquisition.

Conditioned Reinforcement Findings

In addition to the general study design, a conditioned reinforcement test was performed to determine the desirability of the lever-cue for each phenotype group. Conditioned reinforcement uses an active and inactive nose-poke port in which the lever is presented in response to only an active nose poke. Typical data suggests that rats will have preference to the active nose-poke port. STs have particular interest in the active nose-poke port due to the incentive salience associated with the lever. Data showed that DREADD/CNO rats had a statistically significant preference for the active nose-poke port (Figure 6; 2-way ANOVA; effect of nose poke; $F(1,22)=8.915$, $p=0.0068$). Interestingly, however, DREADD/vehicle animals, consisting of only ST and IR rats, did

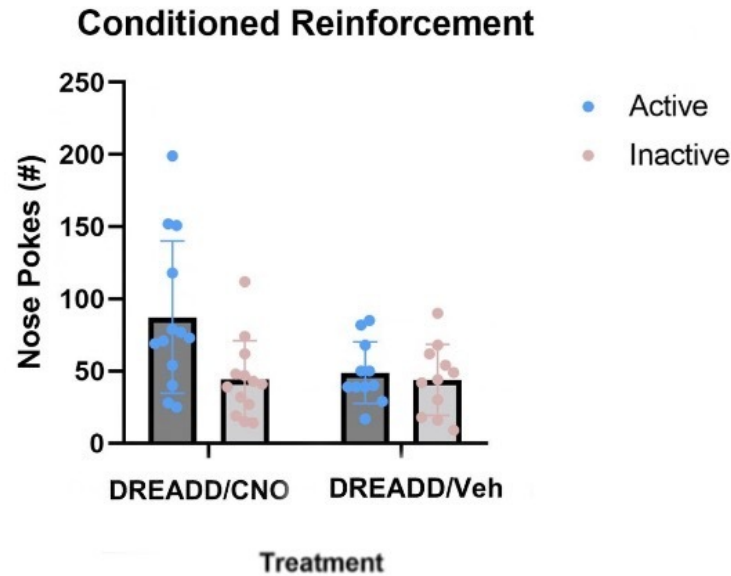


Figure 6. DREADD/CNO group showed preference for the active nose-poke port. DREADD/Vehicle group did not show preference for the active nose-poke port.

not show preference to active nose-pokes during conditioned reinforcement (Figure 6; 2-way ANOVA; effect of treatment x nose poke; $F(1,22)=5.558$, $p=0.0277$).

DISCUSSION

Despite the lack of statistically significant evidence to support the role of the vHPC-NAc pathway in PCA behavior, there does seem to be a trend of DREADD/CNO rats sign-tracking less than the DREADD/vehicle group during acquisition. These findings suggest that there may be a trend of increased activity in the vHPC-NAc pathway leading to a decrease in sign-tracking behaviors. This does not seem to parallel the Fitzpatrick et al. (2016) study in which lesions of the vHPC decreased sign-tracking behaviors, and therefore, the original hypothesis is unsupported. However, our data is more consistent with previous findings in which lesions of the entire HPC increased sign-tracking behaviors (Ito et al., 2005), as well as a previous inhibitory DREADD experiment conducted in our lab that found a statistically significant decrease in sign-tracking behaviors when inhibition was removed (Unpublished Data). These findings suggest that further investigation is necessary to determine the specific relationship between the vHPC-NAc pathway and sign-tracking behaviors. It is possible that other projections from the vHPC may have effects on sign- and goal-tracking that are opposite to those of the vHPC-NAc pathway, and the interplay among these projections may ultimately determine the overall effect on behavior.

Ventral Hippocampus

Depending on the context, cues may have different behavioral or craving responses. These responses may differ due to the vHPC, as it is considered to be a vital player in contextual information and learning. Research has shown that STs are not as engaged in contextual learning and lack mediation within the vHPC for behavioral responses to cues (Robinson et al., 2014). Therefore, STs may have an impaired contextual association, leading to particular cues inducing the same response regardless of the context (Morrow et al., 2011). In drug use, this means that a cue previously associated with a drug may cause drug seeking behaviors for STs despite the context the individual may be in. The cues presented may then lead to drug cravings and seeking even in situations in which it may be more problematic. In this study specifically, it seems as though artificially engaging the vHPC may affect sign-tracking behaviors, possibly leading to a decrease in sign-tracking and an increase in goal-tracking. In other words, due to the vHPC's involvement in contextual learning, as well as mediation of behavioral responses, increased activity in the vHPC may lead to a decrease in sign-tracking behaviors. These findings support previous theories of the vHPC's involvement in sign-tracking and may explain the trends found in our data. This suggests that sign-tracking may not be as dependent on dopamine as previously thought, but it is also critically influenced by the information exchange from one region to the other.

Human Translations

As previously discussed, animal models show excellent promise for paralleling human addictive behaviors (Colaizzi et al., 2020; Failing et al., 2015; Garofalo & di Pellegrino, 2015; Le Pelley et al., 2015; Pearson et al., 2015, 2016). Findings suggest that there may be a connection between increased activity in the vHPC-NAc pathway and a decrease in sign-tracking behaviors. Should there be an association, whatever it may be, this may offer insight into the neurological causes of sign-tracking behaviors, which is important since sign-tracking has shown a higher propensity for addiction and relapse. Through translation, this may offer an opportunity to research neurological aspects of addiction and allow for manipulation or treatment of learning and behavioral styles as research progresses.

LIMITATIONS AND FUTURE RESEARCH

There are a variety of limitations to this project to be discussed. One limitation was the study pool. Due to the limited number of rats involved in the study, there was also a lack of GTs in the DREADD/vehicle group. We recognize that this may skew the data and limit the statistical significance of the data. Future research should consist of a greater pool of rats to increase the chance of a more successful and well-balanced study. Ideally, the control group would contain a roughly equal mixture of STs, GTs, and intermediate animals representing a full range of behavioral biases, which would make it much easier to discern differences in the phenotype distribution of the experimental group in any direction. Further, it will be critical to complete immunohistochemical

staining of brain slices from these animals and microscopy to confirm proper expression of the DREADDs. Especially in light of the negative findings presented here, expression observations will help determine whether the manipulation itself had no effect or whether incomplete or off-target expression may have masked the behavioral effect in some subjects.



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RESEARCH ARTICLES

The Effects of Inpatient Psychiatric Socio-Physical Experience on Posthospitalization Treatment

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Much has been done in the psychiatry field to improve the social and environmental areas such as the types of treatment offered and increased hygiene within facilities (Cahalan, 2019). This research explores the relationship between a patient's social and physical experience in a psychiatric hospital and their engagement with mental health treatment after discharge. By conducting semi-structured interviews with individuals who have previously been admitted into a psychiatric hospital, I analyze the social factors of in-patient facilities, such as interactions with mental health professionals, fellow patients, and family members. Furthermore, I evaluate the environmental factors of psychiatric rooms through the evaluation of room design and its effectiveness in creating a therapeutic environment. The results point to a relationship between a patient's negative socio-physical experience in an inpatient psychiatric facility and decreased engagement in future treatment after discharge, with the nature of mental disorder playing a role. These findings could help providers improve upon these experiences and increase a patient's receptivity to post-hospitalization treatment.

Introduction and Background Literature

As the number of people experiencing mental illness skyrockets (Mental Health America, 2023), it is essential to focus on improving socio-physical experiences in psychiatric hospitals in an attempt to continue engaging patients with effective treatment post-hospitalization. Previous literature indicates that social or physical experiences individually can affect treatment during inpatient psychiatric care. However, few qualitative studies have been conducted on this topic and fewer focus on the intersection of social and physical experiences. Building on previous studies, I explore socio-physical aspects through patient experiences. This research aims to address a gap in the scientific literature that explores the effects of socio-physical psychiatric hospital environments on a patient's receptivity to treatment post-hospitalization. Additional studies addressing this gap may guide mental health professionals in engaging patients with treatment after discharge. In the following paragraphs, I review literature demonstrating the importance of physical and social psychiatric environments, highlighting findings that have been shown to improve therapeutic settings in psychiatric hospitals.

Christenfeld et al. (1989) first examined room design effects on relationships between staff and patients, patient violence, and patient mental illness. This was one of the first studies to use experimental methods to explore the effects of room design on patients with chronic mental illness. They experimented with two different psychiatric rooms: the first was a traditional room, and the second with a redesigned setting with improvements to bedding, windows, and

^a Faculty Mentor

furniture. The results indicated increased staff social interactions with patients and a 50 percent decrease in patient violence in the second room compared to the first. Although no changes were seen in irritability or depression, patients reported improvement in their self-image.

More recently, scholars have found positive impacts of interior design in psychiatric hospitals (Vaaler et al., 2005). Cummings, Grandfield, and Coldwell (2010) investigated the effects of physical experiences through room design on the reduction of seclusion and restraint. Much like Christenfeld et al. (1989), Cummings and her colleagues incorporated setting improvements into a redesigned psychiatric room and compared them to those without these improvements. Their results show that “comfortable furniture, soothing colors, soft lighting, quiet music, and other sensory aids help reduce unsettled patient stress” (Cummings et al., 2010, p. 26). The findings point to the importance of physical experiences in a therapeutic environment, highlighting the effects that simple room design, such as lighting and colors, can have on a patient.

Recognizing that a patient’s hospitalization experience may encompass more than physical aspects, it is also crucial to examine previous literature on social interactions. The impact of social experiences on treatment receptivity is not a new concept (Sommer & Ross, 1958). Bowersox et al. (2013) found that positive social experiences correlate with increased patient follow-up care post-hospitalization in an analysis of a veteran population. The Veteran Health Administration (VHA) survey was used to identify factors of satisfaction and its relation to engagement with post-hospitalization treatment. Although the study examined the experiences of only veterans, the evidence suggests that negative or positive social experiences affect engagement post-hospitalization treatment.

Although these studies suggest that physical and social experiences individually affect patient experiences during in-patient psychiatric care with one study pointing to a relationship between positive social experiences and treatment outcomes, the combined impact of both experiences remains to be explored (Bowersox et al., 2013). Consequently, this investigation aims to answer what the effects, if any, of both social and physical experiences are on a patient’s engagement with treatment post-hospitalization. By comprehensively examining these experiences, we may gain a deeper understanding of the intersection of socio-physical experiences and their quality on psychiatric patients’ willingness to continue treatment after being discharged.

Study Design & Methods

This study is designed to explore the following research question: What are the effects of socio-physical experiences on a patient’s engagement with treatment post-hospitalization? This question is examined through previous psychiatric patients who provide additional information about their personal experience with social and physical environments in psychiatric hospitals. Drawing on this experiential data, I explore the effects of socio-physical

experiences on post-hospitalization treatment through semi-structured interviews. All study procedures were reviewed and approved by the University of Washington Institutional Review Board prior to recruitment.

Participants were recruited through word of mouth and via digital and physical flyers that were distributed through canvassing and sent to primary contacts within the university. The flyers detailed the study and its purpose. Eligibility criteria included: 1) being 18 or older; 2) having an affiliation to the university, 3) and having been admitted into a psychiatric hospital within the last four years. I employed snowball sampling by having participants recruit fellow patients as future participants. These sampling methods limit my ability to make broader assumptions of general psychiatric hospitals. Nevertheless, the findings of this research study may pave the way for future studies in broader populations.

I conducted in-depth semi-structured interviews, creating questions by identifying key physical and social factors in the research presented under the literature section. The interviews aimed to understand the various socio-physical factors contributing to the in-patient experiences of each individual, including room design's therapeutic effects on patients and social aspects, such as initial wait time before speaking to mental health professionals and interactions with other patients. These factors have been previously studied individually but not together. Consequently, a list of questions was created by pulling factors together from previous study findings to explore their associations. See Appendix A for the interview protocol.

Interviews lasted 45 minutes to an hour and were administered to seven participants who had been previously admitted into psychiatric hospitals. Four of the seven participants identified as female, one as male, and one as gender queer. Participants' ages ranged from 19-59 with the majority falling within the 19-30 age range. Two participants identified as Asian, two as Caucasian, one as Caucasian and Latine, and the last participant as African American. Half of these participants had a household income \$50,000 or less, and the other half had an income well over that threshold.

After completion of the interviews, participant responses were transcribed and then coded for inductive and latent thematic analysis using the guidelines provided in Braun and Clarke's (2008) article on using thematic analysis in psychology. The thematic analysis process encompassed several steps. These consisted of familiarization of the data through transcription and systemic coding by categorizing the content. Throughout this process, emerging themes were identified, reviewed, defined, and named to examine underlying patterns. Due to a limited sample size, a theme was coded when it emerged in two or more participant interviews. All participant names were replaced with pseudonyms to protect their privacy.

Table 1. Socio-Physical Experiences & Treatment Continuation

Participants	Social Experiences	Physical Experiences	Treatment Continuation
Jennifer	N	N	No
MacKenzie	P	P	Yes
Rebecca	N	N	Only Meds
Olivia	N	P	No
Isabelle	N	N	Only Meds
Daniel	P	P	Yes
Stephanie	N	N	No

Note. N=Negative, P=Positive

Summary of Findings

The findings presented in this study consist of data from seven individuals who have experienced psychiatric hospitalization within the last four years. [Table 1](#) provides an overview of the participant, their perception of social and physical experiences, and treatment continuation.

Participants categorized their social and physical experiences separately as either subjectively positive or negative. Of seven participants, two identified their socio-physical experiences as positive and four as negative. One individual categorized their social experience as positive and their physical experience as negative. Four of these individuals continue to engage in treatment post-hospitalization, half of which only receive medications, and three participants do not engage in any treatment. All were admitted as emergency cases, yet their engagement with treatment post-hospitalization and socio-physical experiences varies based on factors such as interactions with staff and the overall therapeutic effect of room design. I present findings in two sections. The first examines the dominant themes patients identified as contributing to an overall positive or negative hospitalization experience; the second explores the relationship between these factors and patients' receptivity to and engagement with treatment after hospitalization.

Hospitalization as a Positive or Negative Experience

Six dominant themes emerged as being pivotal to patients characterizing their emergency hospitalization as a mostly positive or negative experience. Social factors included: 1) frequency of interactions with mental health professionals, fellow patients, and loved ones; 2) communication of program expectations; and 3) validation from staff or other patients. Key physical factors impacting patients' experiences included: 1) furniture and room design; 2) having a private space; and 3) the presence of natural light. In the following section, I examine each of these themes in depth, providing examples from the transcripts as evidence.

Frequency of interactions: "There's always someone you could go to."

Frequency of interactions refers to the communication between participants and mental health professionals, loved ones, or fellow patients. This factor emerged in three of the participant interviews and was described as affecting

the overall social experiences of the participants. Amongst those who described their social experiences as positive was MacKenzie. Her interactions with mental health professionals and fellow patients were frequent and accessible. She explained:

You could pull any of them aside and go into your own room [...] there's always someone you could go to. Even walking into the bathroom, you pass like four or five of them just sitting at their desk and they'll be like: Hey, you need anything?

Much like MacKenzie, Daniel had very similar experiences during his inpatient stay. He describes consistent interactions with mental health professionals and notably, fellow patients as well. He discusses the importance of “meet[ing] them pretty frequently [...] definitely every day” but largely attributes his success with treatment to the social exchanges he had with other patients.

Although MacKenzie and Daniel described frequency of interactions when speaking of their in-patient social experiences through a positive lens, other participants like Jennifer recount negative social experiences. When asked about the frequency of interactions, Jennifer details a long wait time before speaking to a psychiatrist during the initial admissions process. Jennifer's social experience between the time she was first admitted and when she first spoke to a mental health professional is best described through the following quote:

I couldn't do nothing. I just sat there for hours and hours and hours freezing. The more I sat there, the more traumatized and re-traumatized I got over the original incident, the more scared I got thinking about, oh my gosh, I'm never going to get out of here. My mind was just racing, I was terrified, and I had zero support, even from them.

Jennifer goes on to describe a lack of social interaction not only with mental health professionals but also with family members. When she asked to have a family member present, her request was denied. Similarly, both Stephanie and Isabelle expressed wanting to “meet with a psychiatrist more often” to discuss treatment plans. The lack of this interaction among staff and loved ones seemed to contribute to their negative categorization of social experiences.

Communication of program expectation: “They explained everything to me.”

Another factor that emerged consistently throughout four of the interviews was the communication of program expectations. This includes the explanation of the admission process, treatment plan, and next steps to patients from mental health professionals. As the only two participants to describe their social experiences as positive, Daniel and MacKenzie outline the communication they received from staff about program expectations. Daniel states: “They definitely went through a lot of paperwork [...] and they

explained everything to me.” Likewise, MacKenzie narrates her admission process, where she received a binder containing important information about the following steps, policies, and treatment options. She had the opportunity to scan these details before discussing it with a psychiatrist.

In contrast, Rebecca details her challenges in navigating the admission process due to little or no communication of program expectations. When asked to explain how she felt during that time, she responds:

It felt like a puzzle you had to figure out for yourself. Where am I? What is this? No one even told me we were going there [...] I think what marks that whole entering experience was a lack of information.

Rebecca expresses a lack of comfort due to a falter in the communication of program expectations from staff members including her psychiatrist. Other patients like Stephanie also express a similar sentiment in wanting communication about their treatment plan and knowing what follows. She hoped to have the opportunity to “talk [...] more about how [she’s] doing, what medications [she] should take and when to get started,” but there was a lack of disclosure about her treatment plan and following stages, adding to her negative in-patient social experiences.

Validation: “She minimized what I was going through.”

Validation includes the recognition and acceptance of an individual’s internal struggles and mental health difficulties from either mental health professionals or fellow patients. This theme emerged the most, surfacing in five out of the seven interviews conducted. Participants who categorized their social experiences as negative often described a lack of validation from in-patient staff members. Olivia recounts feeling invalidated by her psychiatrist:

I just felt like she was very disrespectful about a lot of things and, like, the way she’d talk to me. She definitely did not, like, really listen and almost made it seem like she minimized what I was going through.

Olivia shares her desire of being heard and validated by the staff but most importantly by her psychiatrist who played a major role in the treatment she received.

Jennifer also depicts a similar experience when she was first admitted. While discussing her personal life and mental health troubles, she was met with skepticism by her psychiatrist. Her psychiatrist did not believe nor accept her struggles, asserting Jennifer’s narrative was not true until she finally spoke with Jennifer’s daughter who confirmed the events. When asked to describe her experience, Jennifer paints the following scenario with her psychiatrist:

She'd say: 'That's not totally true, is it?' and she's talking to my daughter, like I'm nobody. I'm invisible, right, and my daughter's confirming each time and as this happened several times, then finally her demeanor changed, and she started to see me as a person.

Both Jennifer and Olivia experienced a sense of invalidation from psychiatrists and attribute these experiences to their overall negative view of their in-patient social experience.

Unlike previous participants, both Mackenzie and Daniel tell different stories. Although both do not explicitly talk about receiving validation from mental health professionals, they do talk about their positive experiences with therapists where they were able to talk about their struggles and be heard; this validation was not offered to Jennifer and Olivia. Additionally, both mention receiving this validation from fellow patients, where they were able to share their experiences while also providing that same support to others. Daniel looks back upon a specific instance where he bonded with another patient who provided validation, and he to her. He states being “there to help each other” and thinks back fondly of his fellow patients. Both MacKenzie and Daniel had the opportunity to receive validation from therapists and fellow patients which impacted their overall positive social experiences.

Physical experiences: “It was just a small room with a cot and a chair.”

Under physical experiences, three major factors emerged as influencing whether hospitalization was a positive or negative experience. These included additional considerations in design with furniture, having a private space, and access to natural light. The first theme that emerged in two participants' responses was the presence of furniture. From individuals who categorized their physical experiences as negative, Jennifer details her first impression of her in-patient room: “there were no windows, it was just a small room with a cot and a chair, and I was told to sit on the cot.” She goes on to express wanting a room that would convey a feeling of comfort rather than perpetuating traumatization through additional furniture. Similarly, Rebecca describes the emptiness of the room that had “nothing on the walls, no color, it was just like a small room.” Both emphasized the impact this lack of design made on their negative view of physical experience.

In three of the seven interviews, a dedicated private space was mentioned as a contributing factor to their physical experiences. Olivia saw her experience as positive and recounted what attributed to that.

“I liked the privacy of the room [...] the main part that I enjoyed was that there's a place in the ward where I could go and have alone time.”

This privacy allowed her the time to reflect and settle her stress during a time where she felt uncertainty. Isabelle, who subjectively saw her physical experiences as negative, also expressed a similar desire for a private space. There

were few “places to go and [she] didn’t really have any privacy” resulting in her negative physical experiences during her in-patient stay. Differing access to privacy resulted in differing experiences of the physical setting.

The last emerging factor identified in three participants’ physical impressions was the presence of natural light. When asked to describe her in-patient room, Isabelle details:

There was, maybe one little window that was high up on the ceiling. I missed the natural light and then when I did get to go outside it was for a few minutes.

She expresses wanting more access to natural light whether through room design or additional outside time. In contrast, those who had positive physical experiences also mention natural light but through a different lens. MacKenzie’s main attribution to this perception was the large windows that covered most of the walls at her in-patient facility. She thinks back on “the most beautiful view of Mount Rainier” and the natural light these windows provided. MacKenzie describes the peace and comfort it provided her, thus affecting her view of the physical experiences in her facility. Similarly, Stephanie shares her view on the natural light’s positive affect:

There was like a lot of sun [...] everything was just always open and there were many windows, and it really made me feel better. I think that made a lot of the other patients feel a lot better.

Both MacKenzie and Stephanie credit their comfort and improvement to the natural light that was present, making their perception of the physical environment seem positive.

Treatment Continuation Post-Hospitalization

In addition to examining the nature of participants’ socio-physical experience, it is also essential to explore the relationship with treatment engagement post-hospitalization. Treatment continuation refers to a participant’s receptivity to treatment after they are discharged. Their engagement with treatment can be split into three types: none, only medication, and both therapy and medication. After participants had the opportunity to describe their socio-physical experiences, they were asked about the treatment they continue to use. Participants’ treatment status by categorization of their socio-physical experiences is detailed in [Table 1](#) to visualize the relationship between hospitalization experiences and subsequent engagement with treatment. It shows that the two participants who reported both positive social and physical experiences of hospitalization were the only two who continued treatment that included medication and a therapist; the five who reported either a negative social or physical experience (four reported both as negative) did not. Two of the four individuals who reported both negative social and physical experiences of hospitalization did not continue any

treatment at all and two reported continuing to take medication only. These findings suggest a relationship between socio-physical experiences during hospitalization and receptivity to treatment after discharge.

No treatment continuation

Three participants reported not engaging with treatment post-hospitalization. Jennifer details the effect her in-patient experience had on her treatment continuation:

My trust had dissolved into non-existence, and I didn't have much to begin with, but what I had was now completely gone for the whole entire medical field. I just said, 'Forget it, I'm just going to figure this out on my own.'

She describes losing faith in the mental health sector and recounts calling various individuals and discouraging them from seeking help through professionals in this field. Olivia and Stephanie share the same aversion to mental health professionals. These three participants express that the negative socio-physical experiences during their in-patient stay informed their decision to discontinue treatment shortly after being discharged. Olivia “never talked to a doctor ever again” and is not planning to in the future despite her depression. They continue to cope with their mental illness but have expressed not wanting, nor planning, to see a mental health professional in the foreseeable future.

Medication treatment

Although two of the four participants who had both negative social and physical experiences chose to opt out of treatment post-hospitalization, two participants continue to only take medication. When asked about her current treatment status, Rebecca states:

You have to be really on meds for the rest of your life if you want to successfully manage bipolar. This is not something you can wean yourself off of without you going through another episode, so I'm definitely still in that, but I dropped my therapy.

Likewise, Isabelle stopped seeking and receiving therapy shortly after her discharge. Despite initially attending outpatient treatment, she soon halted her engagement with therapy but continues to take medication.

Medication & therapy treatment

Unlike all previous participants, two participants continue to receive both therapy and medications as a form of treatment. MacKenzie points to the importance of her positive in-patient stay and socio-physical experiences as being key to improvement in her mental health and continuation of treatment. MacKenzie recounts the active role that mental health professionals played in her engagement with treatment after discharge:

While I was still inpatient, they went ahead and helped me set up connections with a support group that was specialized for what I was going through and that I connected with.

McKenzie continues to detail the significance of the connection her inpatient staff helped create with out-patient treatment groups and her positive experiences in seeking treatment on her engagement with treatment. Much like MacKenzie, Daniel also expressed this similar sentiment and continues receiving both therapy and medication. He looks back on his socio-physical experiences and credits his current mental health improvement and engagement to the interactions with mental health professionals, fellow patients, and an overall supportive environment.

Discussion

This study set out to explore the relationship between a patient's social and physical experience in a psychiatric hospital and their engagement with mental health treatment after discharge. I analyzed seven cases through in-depth semi-structured interviews. With a few exceptions, the data point to a relationship between socio-physical experiences and engagement with treatment post-hospitalization with those who categorized their experiences as positive continuing treatment and those who perceived them negatively discontinuing treatment after discharge. Participants in this study described the positive impact of natural light and comfortable physical spaces, confirming the findings of Cummings et al. (2010). My results also further align with Bowersox et al.'s (2013) study, which suggests a correlation between positive social experiences and increased patient treatment engagement after discharge. However, their study does not consider physical experiences and the effects they may have on treatment receptivity posthospitalization if they are negative. The outliers in this data may be attributed to the nature of the mental illness and the variance in effect between social and physical experiences on treatment receptivity. I explore the relationship between socio-physical experiences below and the nature of mental illness as an additional variable.

Participants who categorized their socio-physical experiences as positive continue to receive both medication and therapy as forms of treatment. Their overall positive experiences seem to have contributed to their continued engagement with treatment. However, participants who perceived their socio-physical experiences as negative discontinued treatment shortly after being discharged except for two individuals. These exceptions will be explored below. Only one participant categorized their social experience as negative and physical experience as positive, and they discontinued treatment. If negative socio-physical experiences contribute to an individual's decrease in engagement with treatment, then why are there three exceptions?

Unlike those who have completely rejected treatment, two were previously diagnosed with bipolar disorder, a psychotic illness that is primarily manageable with medication. Although many mental illnesses are treated with both medication and therapy, psychotic illnesses such as bipolar and

schizophrenia are treated with medication as the focal treatment. Without medication, these mental illnesses particularly disrupt emotional, psychological, and social well-being. Consequently, individuals with psychotic disorders may be more likely to feel they cannot manage their illness without medication due to the level of disruption in its absence.

Rebecca, one of the two participants who was diagnosed with bipolar disorder and experienced negative socio-physical experiences expressed the need for medication to successfully manage her bipolar disorder. She strongly believes that her medication “is not something you can wean yourself off of without going through another episode.” However, patients who were diagnosed with non-psychotic mental disorders are more likely to believe they can manage their mental illness without any form of treatment. Olivia, who copes with depression and perceives her social-physical experiences as negative, is confident in her ability to “get over everything [herself] and [...] weaned off all [her] meds.” The difference between treatment continuation in participants who viewed their socio-physical experiences as negative may be attributed to the nature of the mental disorder—an area that has not been previously explored in the literature. The results show that other factors, such as character or severity of mental disorder, in addition to socio-physical experiences could also contribute to treatment receptivity post-hospitalization.

These initial findings also suggest that while exposure to negative or positive socio-physical experiences influences treatment continuation, the degree of impact amongst both experiences may differentiate. Olivia was the only participant who categorized her social experience as negative and physical experience as positive. She discontinued treatment shortly after being discharged from the in-patient psychiatric unit despite having positive physical experiences. Olivia stated: “I haven’t seen any mental health professional at all” when asked about the long-term impact of her in-patient stay. Future research should explore both social and physical experiences and whether they play an equal role in the engagement of treatment post-hospitalization.

Despite a few outliers, the data follows a general trend. Participants who were exposed to positive socio-physical experiences continue treatment, and participants who report negative socio-physical experiences discontinue treatment. Additional variables may also affect their decision to continue or discontinue treatment, such as the nature of mental illness and the difference in effects between social and physical experiences. While earlier studies suggest a relationship between social experiences and treatment engagement (Bowersox et al., 2013), few have also examined physical experiences and no studies have examined the impact of socio-physical experiences in addition to type of mental illness on receptivity to post-hospitalization treatment.

Conclusion

The findings suggest a positive relationship between social experiences and patient receptivity to ongoing treatment post-hospitalization, but not between physical experiences and engagement with treatment. However, there are limitations to this study and the data analysis presented here. The sampling

methods used limit my ability to make broader assumptions of general psychiatric hospitals and psychiatric patients. A larger sample size would make analyzing trends within subgroups possible, enabling us to examine the influence of intersectional identities such as education, socio-economic status, and race/ethnicity on these dynamics. Additionally, the study design limits distinctions between the influence of socio-physical experiences during hospitalization and nature of mental disorder on treatment receptivity after being discharged. Incorporating interview questions about mental disorders such as severity, diagnosis, and disruption may provide a clearer differentiation.

The limitations listed above point to the need for additional research on this topic. First, interviews with a larger and more representative sample size of psychiatric patients need to be conducted. This will determine if these early trends are indeed consistent patterns of association between positive perceptions of the socio-physical experiences and increased receptivity to post-hospitalization treatment. In addition, further research needs to be conducted that explores the degree to which social and physical experiences versus the nature of mental illness impacts receptivity to post hospitalization treatment. Thus, while this study provides a valuable insight into these participants' experiences, further data collection and analysis are needed to fully understand how socio-physical features of psychiatric hospitals impact patients' receptivity to post-hospitalization treatment.

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Appendix A: Interview Protocol

1. How many times have you been admitted into a psychiatric institution?
 - a. [Follow-Up]: What institution were you admitted to?
2. Were you voluntarily admitted?
3. How many days were you hospitalized at (respective) hospital?
 - a. [Follow-Up]: Were you transferred?
4. Think about the [most recent] time you were admitted. Did you have to go through any safety procedures?
 - a. [Prompt]: I'm wondering if you were placed in any restraints, or if they asked that you remove personal items like shoes, laces, etc.?
5. Again, thinking back on that time of admission, I want you to try to visualize the patient room you were admitted to. What was your first impression of the patient room you were admitted into?
6. Describe the room to me.
 - a. [Prompt]: What color were the walls?
 - b. [Prompt]: Any smell that you can recall?
 - c. [Prompt]: Were there any windows? [curtains, covering, etc.]
 - d. [Prompt]: How bright was the room? [well-lit, dark, dim, etc.]
 - e. [Prompt]: What about the floor - do you recall what it looked like?
 - f. [Prompt]: Were there any furnishings in the room? Please describe them [bed, table, chair, wall hangings]
 - g. [Prompt]: What was the temperature like in the room?
 - h. [Prompt]: I'm looking for room design details, temperature, or anything of significance to you.
7. Would you say that the overall room made you feel comforted?
 - a. [If yes]: What about the room felt comforting to you? That is, what specific aspects created a sense of comfort?
 - b. [If not]: What about the room didn't feel comforting for you? That is, what specific aspects of the room lacked a sense of comfort for you?
8. While you waited to speak with the staff and psychiatrist, what did you do?

- a. [Follow-Up]: Were there any activities you engaged in or did you speak to family members in the meantime? How long were these engagements?
- 9. Did you receive any individual support??
 - a. [Prompt]: I'm looking for a point of contact that checks up on you, your well-being, or treatment.
- 10. What type of treatments were you set up with after your visit?
 - a. [Follow-Up]: Did you complete it?
- 11. Thinking about the time between when you were admitted to the psychiatric unit to the time you spoke with a psychiatrist, how often did you interact with family, staff, or other patients?
- 12. Thinking of the social interactions you had with the staff, Is there anything that left a particular impression on you?
 - a. [Prompt]: This could be an interaction with the staff or a part of the room design.
- 13. Are there any suggested improvements that could be implemented into the inpatient psychiatric experience?

RESEARCH ARTICLES

Hispanic and Latino Adolescent Alcohol Age of Initiation and Potential Neurological Risk Factors

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Objectives

Alcohol is highly toxic on a neurological level in the vulnerable, adolescent brain. Early exposure or constant use can cause irreversible risk in neurodegenerative disorders, like Parkinson's, Alzheimer's, or Huntington's Disease. The aim of this study is to examine alcohol as a potential risk factor for Parkinson's Disease by exploring Hispanic/Latino adolescents, a high-risk population within the United States.

Methods

Pre-existing data from Center for Disease Control's The Youth Risk Behavior Surveillance System (YRBSS, 2019) was used. A frequency analysis and a correlation analysis was done on a screened sample of 1,009 Hispanic and Latino adolescents to explore the potential impact on current alcohol use and its developmentally-related neurological risk factors. Participant data was examined based on their current use, binge drinking behaviors, and source of alcohol consumption.

Results

A correlation was found to show Hispanic and Latino individuals had a higher risk of continued alcohol use following first exposure. Additionally, current alcohol use was also found to increase in the number of drinks consumed, as well as the occurrence of binge drinking for adolescents with early initiation. Our comprehensive analysis showed an importance in further investigation on the development of potential neural issues within this population due to its connection with alcohol use.

Conclusion

This study provides further information on the relationship between the Hispanic/Latino population and alcohol usage and identifies alcohol as a potential risk for neurodegenerative disorders. Future research could examine this relationship to determine necessary protective factors for early alcohol initiation.

Introduction

Adolescence is a defining period in the life of an individual that deals with constant development in the social, cognitive, and behavioral domains (Lees et al., 2020). The World Health Organization (WHO) adolescent age ranges from 10 years to 19 years old (WHO, 2023). Adolescence is defined as "a developmental period" in an individual's life where children transition into adulthood (El Marroun et al., 2021; Galván, 2021). It is characterized by changes within social, biological, and psychological levels dependent on internal and external forces (Galván, 2021). These behaviors are indicative of the brain's stage of maturity. At this stage, individuals gain "personal social goals" that are exhibited through decisions on broader abstract thought, which may include riskier behavior like substance use and alcohol consumption (El

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Marroun et al., 2021; Trucco & Hartmann, 2021). Due to the brain's immaturity, the adolescent stage of life is deemed highly vulnerable to neurodevelopmental changes and challenges (Guerri & Pascual, 2010; Tapert et al., 2004). The challenges could be genetic or compounded by the introduction of external influences, such as by consumption of alcohol or the use of illicit substances that may alter typical brain function (Crews, 2008; Patton et al., 2007; Rao & Topiwala, 2020; Tapert & Ebersson-Shumate, 2022). This vulnerability and the prospective changes to the brain due to external influences could easily contribute to the negative health outcomes based on socio-environmental influences. This study focuses on alcohol and its effect on neurodevelopment during this important formation period. One specific subject population is investigated - the Hispanic and Latino population.

Alcohol Effects on the Adolescent Brain

Given that alcohol is a toxin and the brain undergoes developmental changes during adolescence, alcohol consumption is often investigated in regards to its negative impact due to an early introduction to the body. Individuals who consume alcohol by the age of 14, still several years from the legal U.S drinking age, are five times more likely to develop an alcohol-based disorder or injury (Trucco & Hartmann, 2021). This early alcohol consumption may lead to major health consequences with studies showing alcohol's risk to the brain's memory, attention, and abstract reasoning functions (Tapert et al., 2004). These complications could contribute to the formation of a neurological disorder, which develops due to "structural, biochemical, or electrical abnormalities" found or formed within the central nervous system (Moore & Thomas, 2012, p. 7). Since alcohol is strongly associated with brain damage, it can contribute to both structural and biochemical alterations in the brain. It is possible that introducing alcohol at such a vulnerable stage of brain development could be problematic to adolescents, especially if alcohol initiation is introduced at increasingly younger ages (Lees et al., 2020).

Through animal studies, it was found that alcohol damage to the brain is tied to chemical and molecular changes as well as cell death and rapid cell generation (Crews, 2008). Therefore, alcohol has been shown to possibly have a large impact on how well or unwell the brain functions. So, given that alcohol is one of the most used substances by young adults, mainly due to ease of accessibility, there are concerns for this population and the negative effects alcohol may have on the development of the brain (Lees et al., 2020). The United States' legal drinking age of 21 makes no impact on the large number of young adults consuming alcohol. As a result, the method in which the participants examined in this study obtained the alcohol in four illegal ways: 1) money is given to legal individuals by underaged individuals to purchase it; 2) alcohol was simply given to them; 3) alcohol is taken from or received in the household; and 4) any other unlisted way (*2019 YRBS Data User's Guide*, 2019). With the ability to obtain alcohol before the legal age, alcohol has quickly become a global leading risk factor for death or disability (Khauli et al., 2021).

Important cognitive development occurs during the adolescent stage; thus, this stage is termed as a “vulnerable” state in growth. (Rial et al., 2020). The adolescent stage of development can further be broken into three distinct parts: 8 to 13 years old referred to as early; 13 to 17 years referred to as mid-adolescence; and 18 to 20 years referred to as late (Cunha, 2021). Cunha’s study focused on both early and mid-adolescence which shows to have key developmental milestones such as the beginning formation of abstract thinking in early adolescence fully developed by the end of mid-adolescence. This formation of abstract thinking allows individuals to think “hypothetically about the future and assess multiple outcomes,” which gives one the ability to think through decisions and develop a long-term view (Christie & Viner, 2005). When alcohol is added to the system at this critical time, the formation of abstract thought could be slowed or stunted, proving cognitively and behaviorally troublesome later in life. The combined impact of early exposure to alcohol and the underdeveloped awareness towards the dangers of alcohol could result in addiction or enhanced dependence on alcohol (Alcohol Research & Health, 2004).

Neurological Long Term Health Risk

Consuming alcohol early in life and in great quantities is a negative cycle surrounding outcomes in late adulthood for these adolescents (Alcohol Research & Health, 2004). Past studies have found that the consumption of alcohol at an early age creates an increased risk factor to long term neurological consequences (Crews, 2008; Rial et al., 2020). With these examples in mind, some major neurodegenerative disorders that could potentially develop over time include Parkinson’s, Alzheimer’s, or Huntington’s Disease (Peng et al., 2020). It should also be noted that these disorders have no cure, which is why a focus on prevention is essential. This research looks at the age of alcohol initiation with the aim of pursuing further research that connects the damaging effects of alcohol to adolescent brain development and the onset of neurological disorders. An example of a future research question would be finding out if there is a retrospective relationship between age of alcohol initiation and early onset neurological disorders. Both alcohol and neurological disorders impact brain functions and development and early and constant use of alcohol could contribute to neurological health challenges in later years.

Occurrence of Early Alcohol Exposure in Hispanic Individuals

The reason so many adolescents consume alcohol is unknown, therefore considering culture and environment is key in determining the rise in early consumption. Hispanic and Latino ethnicities are of particular interest because they are termed high-risk populations to alcohol exposure (Villegas-Pantoja et al., 2018). Researchers have found a steady increase in the number of Hispanic and Latino youths taking part in alcohol consumption (Villegas-Pantoja et al., 2018). Not only is there an increase in adolescent alcohol use, but the occurrence of when one first drinks seems to decrease in age of first exposure (Brener et al., 2013).

Experiencing adversity in adolescence can result in a greater temptation to drink as a form of ‘escape’ (Crouch et al., 2022). “Children of Hispanic ethnicity are least likely to report living in a safe environment,” which may be a factor in increased alcohol use in this population (Crouch et al., 2022, p. 132). Additionally, a safer household and community environment leads to a higher chance of a healthier development, which should be a mediating factor in decreasing alcohol use (Crouch et al., 2022). Due to the environmental root of being susceptible to the use of alcohol as a coping mechanism, many studies have examined the parenting style that the adolescents were raised in. This is because attachment research has shown children are influenced by their parent’s behavior (Main et al., 1985). Many traditional Hispanic and Latino homes are considered strongly authoritative with deep-rooted traditions of formality and respect of elders (Merianos et al., 2015). This implies many rules and expectations are strongly presented in this parent-child relationship, with a strong emphasis on a “family comes first” dynamic. Authoritative parenting has been shown to negatively impact young adults in Hispanic and Latino communities when used in a frequent and strict manner. Within these households, the authoritative style becomes roughly translated to an increase in parental overprotection and the child’s rejection of a parent relationship, which has been tied to an increase in alcohol use (Villegas-Pantoja et al., 2018).

In addition to home life, Hispanic, and Latino cultures are less likely to use mental health services. With the higher rate of low-income households present within these communities, access to mental health services is poor due to the inability to afford services or because services are physically unavailable for the most part (Sanchez, 2018). Compounding this issue is that research has found that both Hispanic and Latino cultures often view mental health services and mental illness, like depression or addiction, as untrue or nonexistent. This perspective can possibly lead to mental health illnesses being ignored or undermined (Sanchez, 2018). A lack of mental health services or even acknowledgment of issues could lead adolescents in these communities to participate in risky behavior such as the use of alcohol as a coping mechanism. Now, the common solution for health issues in Hispanic and Latino communities tends to surround the concept of *Curanderismo*, which is folk healing. Folk healing refers to domestic healing practices passed on generationally. However, at times, this healing style can use a more spiritual or religious form which can lead to undermining a diagnosis (Sanchez, 2018).

Due to the ever growing Hispanic and Latino population within the United States (18.5% of the population) this ethnicity becomes an interesting subject to examine (Driscoll & Torres, 2022). This becomes more pertinent for the purpose of this study, due to the present high risk for alcohol intake within this community (Brener et al., 2013).

Current Study

The aim of this study is to examine the budding rate of occurrence of early alcohol initiation within the Hispanic and Latino population in the United States. Using pre-existing data collected by the Centers for Disease Control

(2020), an analysis was done between this ethnic group, their early alcohol exposure/consumption, and the long-term neurological consequences that can result from that alcohol intake. Frequency and correlation analysis were done to examine the relationship between the above factors. We hypothesized that there would be a high occurrence of early and mid-adolescent age of initiation among Hispanic and Latino youth due to their socio-environmental factors compared to the general United States' adolescent population.

Methodology

Participants

For this study, the CDC study data ($n = 13,667$) was adjusted to only include Hispanic and Latino individuals under the age of 14 for a total of 1,009 participants. Of the Hispanic and Latino participants, 317 (31.42%) did not additionally disclose their race, with 692 (68.58%) simply self-reporting as being of the Hispanic and Latino ethnicity. The options for race within the CDC study were: American Indian or Alaska Native, Asian, Black, or African American, Native Hawaiian or Other Pacific Islander, and White. The percentage rates of each race inclusion within the Hispanic and Latino portion were not considered. Four-hundred eighty (480; 47.6 %) identified as male and 529 (52.4%) as female. Initiation referred to the age in which the participating Hispanic and Latino population started or first consumed any form of alcohol. A total of 187 (18.5%) drank alcohol for the first time at 8 years or younger, 160 (15.9%) at 9 to 10 years, 195 (19.3%) 11 to 12 years, 467 (46.3%) 13 to 14 years old.

Measures

A quasi-experimental design was used including the criteria of race, ethnicity, and age. This design was done through the Youth Risk Behavior Surveillance System (YRBSS, 2019), which provided multiple benefits: description of health risk behaviors prevalent to alcohol exposure; examine changes in these health risks over time; and provided ability to evaluate and improve health related programs and concepts. The purpose of the YRBSS can be described in the following three ways: “1) describe the prevalence of health-risk behaviors among youths, 2) assess trends in health-risk behaviors over time, and 3) evaluate and improve health-related policies and programs” (Brener et al., 2013, p. 2).

For this study, a copy of the full comprehensive data set was requested from the CDC and received in the form of a Statistical Package for the Social Sciences (SPSS) version 28 file format (IBM, 2021). The data set was screened to remove adolescents who stated to have never consumed alcohol before. Next, we removed any non-Hispanic and Latino adolescents from the data set. To maintain a strong focus on early alcohol consumption, only adolescents aged 14 and under were taken from the overall data pool. Frequency tables were used to examine the number of occurrences of binge drinking, most drinks, and

source of obtaining alcohol in the Hispanic and Latino youth. A correlation analysis was performed to better illuminate the relationship between separate ethnicity, gender, initiation, and current use.

Procedures

The individuals who participated in this study were recruited through a national based survey, which was administered through a complex random sampling process. Non-probability sampling was done to determine the states included. Cluster sampling was used to determine the districts from each state to include in the study, and then random sampling was used to gather data from adolescents. To gather data for Hispanic and Latino youth, oversampling was used in the districts with the largest proportion of Hispanic and Latino populations. The CDC collected the data through a questionnaire given to participants that took approximately 45 minutes to complete, or approximately a full class period for students. Youth participation in the survey was obtained via written consent from a parent.

Questions were placed in semi-random format with an array of risk behavior topics. For this study, we used five questions from the original questionnaire specific to any alcohol consumption within the last 30 days. These five questions examined were simplified through the following variable levels, “initiation of alcohol use,” “current alcohol use,” “current binge drinking,” “largest number of drinks,” and “source of alcohol use.” All responses were voluntary, thus, there was missing data. Missing data was counted and recorded in the final data points, but was only present in the following two questions, “largest number of drinks,” and “source of alcohol use.”

Results

Age of Initiation

We used frequency distribution tables to categorize and test the occurrence of early alcohol exposure and continued use in Hispanic and Latino adolescents. For alcohol use initiation, most adolescents were introduced to alcohol at the age of 13 to 14 ($n = 467$; 46.3%), followed by 11 to 12 years (19.3%), 8 years and under (18.5%), and 9 to 10 years (15.9%).

Current Alcohol Use and Binge Drinking Behavior

A total of 627 (62.1%) participants stated they had consumed alcohol within the past 30 days. In contrast, 382 (37.9%) participants stated they did not currently use alcohol within the past 30 days. For binge drinking behaviors, located in [Table 1](#), 368 (36.5%) participants self-reported engaging in binge drinking. When controlling for the number of participants who disclosed that they were currently using alcohol, 58.7% of participants were also shown to engage in binge drinking behavior.

Drinks Consumed and Source of Alcohol

[Figure 1](#) shows the number of drinks consumed by participants in a single occurrence of alcohol consumption at a time. Out of the sample, 33.4% of the participants ($n=337$) did not disclose the number of drinks they consumed,

Table 1. Participated in binge drinking in the past 30 days with no control for current alcohol use.

Variable	N	%
Do not Binge	641	63.5%
Binge	368	36.5%

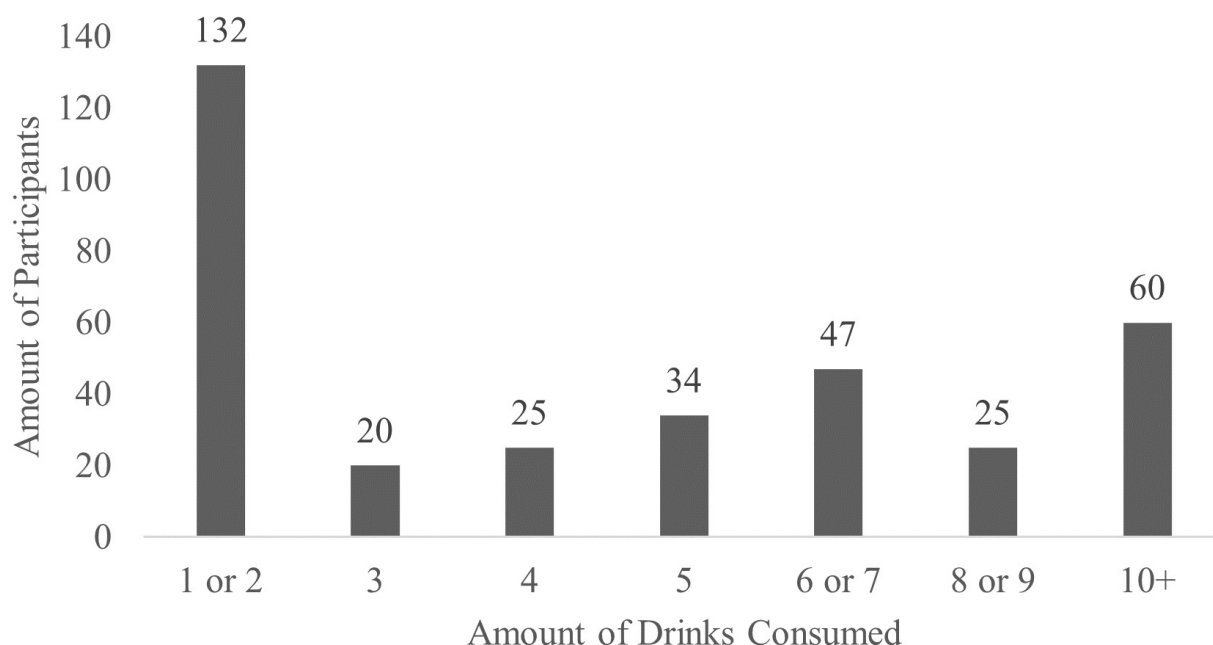


Figure 1. Most drinks consumed in the past 30 days.

*Note. 337 missing/no response data not included in above figure.

resulting in missing data. Out of those who did report ($n = 343$) the greatest number of drinks consumed were 1 or 2 drinks (38.5%), followed by 10 or more (17.5%). We used a frequency distribution to examine the source where participants obtained alcohol with the inclusion of those who reported no drinking (43.2%). Most participants reported, “someone gave it to me” (21.7%), which was followed closely by “some other way” (11.7%), as illustrated in [Figure 2](#).

Correlation Analysis

A correlation analysis was done to examine the relationship between the alcohol consumption variables and Hispanic and Latino adolescents. We found a positive correlation between increased current alcohol use and increased access to alcohol. Additionally, we found a positive correlation in the increase of drinks consumed and binge drinking in the past 30 days. For all variables, there was a 99% confidence level found for Hispanic and Latino individuals of 14 years and under, which is shown in the p values of 0.01 in [Table 2](#).

Discussion

This study identified occurrence and correlational relationships between early alcohol initiation within Hispanic and Latino adolescents and their current use, source of consumption, most drinks, and binge drinking variables

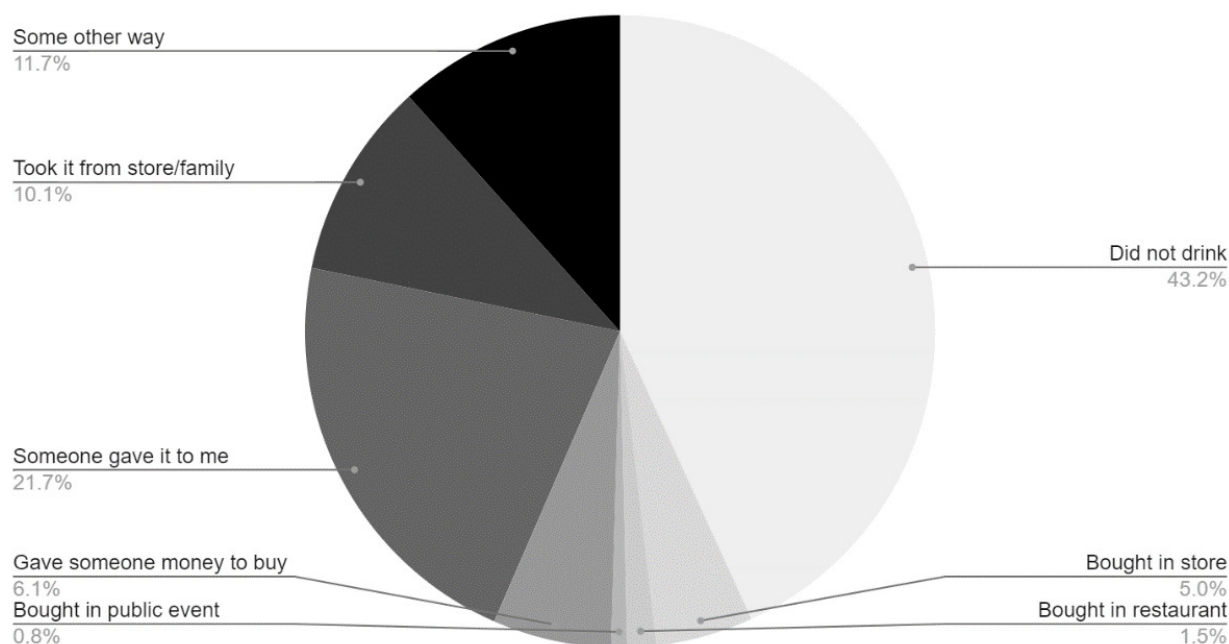


Figure 2. Source of alcohol used in the past 30 days.

*Note. 254 missing/no response data not included in above figure.

Table 2. Correlation analysis for Hispanic and Latino adolescents aged 14 years and under.

Variable	Hispanic/Latino Alcohol Initiation	
	Pearson's <i>r</i>	<i>p</i> -value
Ethnicity	.007	0.40
Gender	.049	0.01**
Current Use	.355	0.01**
Binge Drinking	.199	0.01**
Most Drinks	.310	0.01**
Source of Consumption	.371	0.01**

Note. * $p < 0.05$, ** $p < 0.01$

instated by the pre-existing CDC data. The frequency distribution showed there is a great occurrence of alcohol initiation in students 14 years old and younger. We found that large percentages of Hispanic and Latino adolescents are engaging in alcohol consumption; such a finding is important given adolescent brain development, during which key cognitive developmental milestones occur. Given that alcohol is a neurotoxin, consuming it at a young age poses a danger when introduced in these critical periods. The data also show a considerable occurrence of binge drinking behaviors for participants currently using alcohol. This was further measured by tallying the number of drinks an individual student was most likely to drink at a time. We showed that Hispanic and Latino adolescents consumed 1 or 2 alcoholic drinks each occurrence, with some drinking 10 or more, which is alarming given that some participants were as young as 8 years old. Given the age of participants (14 years of age), race/ethnicity of participants (Hispanic and Latino), and

consumption of alcohol, our data suggest that Hispanic and Latino youth are at high-risk for engaging in these behaviors, and as a result, could develop an alcohol dependence that may lead to health issues in the future.

In addition, a significant relationship between early alcohol exposure and Hispanic and Latino youth was found. Ethnicity was not significant, but this only occurred post CDC data screening ([Table 2](#)). When the Hispanic and Latino ethnicity was compared to all ethnicities present in the full data it significantly correlated to alcohol initiation at a 95% confidence level. When alcohol and ethnicity were examined by age, 8 years and younger to 19 years (as opposed to the study parameters of 14 years old or younger), it was significant at a 99% confidence level. The data supported our hypothesis in that it showed a high rate of early alcohol initiation within the participants. The results also showed that occurrence of binge drinking, most drinks consumed, current alcohol use, and source of alcohol were positively correlated with early alcohol initiation. This suggests that the earlier an adolescent is introduced to alcohol, the higher risk they run of drinking alcohol in a frequent and large manner. Given alcohol's connection to neuron cell death, these findings could imply a higher rate of brain damage.

Implications for Hispanic and Latino Communities

Early, high, and frequent intake of alcohol appeared to have a strong relationship when correlated with the Hispanic and Latino ethnicity. With this high rate, it is possible that this ethnic group runs a higher risk of developing a long-term health consequence, such as neurodegenerative disorders or diseases. Alcohol in and of itself is a problematic toxin as it creates a lot of risk to brain damage and dependency. Therefore, considering that within the Hispanic and Latino communities' children are consuming it, some in higher amounts than adults, the concern becomes clear. According to our research findings, this population is being exposed to alcohol at an alarmingly early age. The adolescents' brains are, in some cases, several years away from mature development making them developmentally vulnerable based on the chemical influence and impact of alcohol on brain development. These findings showcase the importance of research that examines age of alcohol consumption and the potential risk factors associated with the onset of neurological disorders.

In the fields of psychology and counseling, practice implications can include: (a) the mental health provided, (b) the client or consumer of mental health services, and (c) Hispanic and Latino community engagement. By finding a strong correlation in early alcohol exposure in Hispanic and Latino individuals and by exploring this ethnicity's poor access to mental health services given community ideals, this study can promote a need for implementing more services in these under-served communities to combat potential substance abuse issues. Our findings suggest the need to explore potential preventative and protective factors within the Hispanic and Latino

ethnicity because of the high risk for long-term health effects. However, understanding cultural aspects within this ethnicity could lead to a greater grasp of these results as well as how to better implement interventions.

Limitations and Future Directions

One major limitation of this study is the use of pre-existing data from the CDC. Although the use of this data allowed us to examine Hispanic and Latino youths' alcohol use efficiently, it created a few research barriers. For example, a barrier we faced was our inability to access the students who participated in the CDC national survey. This hindered our ability to get a more in-depth analysis on the context behind the high rates of early alcohol initiation within these adolescents. No clarifications could be made on the variables that were examined like what size were the drinks consumed in the binge drinking calculation? This could have given a greater insight on the alcohol content itself, which could result in a more pressing issue arising. Overall, the access and information on the participants may have illuminated some of our findings. Along with that, another limitation we faced was the missing or incomplete data which could have led to a skewing or under occurrence rates in our findings.

A potential direction for a future study could focus more time and resources on the analysis of the possible development of neurological issues as a form of long-term health consequence. With the knowledge of how negatively effective alcohol can be on breaking down or restructuring the brain, in how it functions or develops, brings up an almost obvious chance for health issues in late adulthood. A retroactive study could be conducted with adult Hispanic and Latino individuals who have been diagnosed with a neurological disorder. Through interviews and records, we can look back on their life to pinpoint their alcohol initiation age, and the levels of consumption following that. This could open potential avenues for more exploration on the relationship between the emergence of drinking at a young age in this ethnic group and its tie to long-term health issues. Therefore, given that our findings show Hispanic and Latino adolescents have high levels of early alcohol initiation rates along with large alcohol intake, it is crucial that future research look to create possible protective factors for this high-risk population.

Conclusion

This study provides further information on the relationship between the Hispanic and Latino population and alcohol usage, as well as identifying Hispanic and Latino youth as high-risk for potential long-term health effects. Hispanic and Latino adolescents were shown to engage in early alcohol exposure and consumption, binge drinking, obtaining alcohol illegally, and participating in continued use. This early exposure to alcohol in Hispanic and Latino youth, as well as frequent and large consumption of alcohol, may potentially tie to a higher risk of negative long-term effects in adulthood. This deems this adversity and high risk a serious issue that needs to be researched more in depth in future studies to come.

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RESEARCH ARTICLES

Prosocial Youth Purpose in Peruvian Adolescents During the Pandemic: A Qualitative Study

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Adolescents with prosocial purpose focus on friends, family, and community to develop their identity and maintain positive future expectations. During the COVID-19 pandemic, prosocial purpose may have acted as a source of resilience for teens, especially Peruvian adolescents who faced extreme stress during a uniquely strict lockdown. The aims of this study were to qualitatively describe whether Peruvian adolescents perceived that the pandemic transformed their sense of purpose. A total of 987 adolescents from low- and middle-income households in Peru, ages 11 to 17, completed the Prosocial Youth Purpose Scale (Malin et al., 2017). Adolescents chose their top 3 goals out of a list of 10 that included 5 beyond-the-self-oriented and 5 self-oriented goals and reported on their level of commitment to each of their chosen goals. Adolescents also qualitatively reflected on whether the pandemic changed their goals. Half the students reported that the pandemic shifted their goals and perspectives. Additionally, we found eight themes that emerged in relation to pandemic impacts on goals with three main themes: (1) Self-Perspective Shift, (2) Self-Centered Goal-Oriented, (3) Negative Impact. These findings provide further information on the impacts of COVID-19 on adolescent development in underserved populations like Peru.

Introduction

In adolescence, purpose provides an organizing frame for behavior, goal setting, and identity formation (Damon, 2008). “Young people with full purpose have been shown to follow through on long-term goals, engage in socially responsible behavior, show agency in identifying and acting on issues that concern them, and have an impact in the world” (Malin et al., 2017, p. 1202). Once a person goes through the process of developing and learning what their purpose is, it will help them later in their discovery and commitment to other life goals, such as their future plans, what they want to contribute to their community, or what they can do for their family. It is helpful when teachers or other mentors introduce early the idea of being purposeful to young people as forming purpose then becomes natural and they begin to practice building their own. In addition, according to Damon (2008), by observing the role of purpose for others, young people can identify what they want to improve, accomplish, and use their special talents to contribute to those causes which increases their sense of competence and self-confidence.

Previous research has investigated purpose in low-income backgrounds in the USA. During the 2016–2017 academic year, data was collected from a sample of Southern California youth in order to investigate whether adolescents from low-income backgrounds were likely to have access to lives of purpose (Bronk et al., 2018). The findings suggested that socioeconomic

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status may have a significant impact on the process of purpose discovery but did not seem to affect the prevalence of purpose or its positive developmental consequences. Particularly the low-income youth in this study experienced personal struggles that, when combined with developmental assistance, encouraged rather than impeded their pursuit of purpose. The youth in this study were able to find purpose in striving to better the conditions that challenged them for others thanks to supportive families, like-minded classmates, religious beliefs, and other developmental resources (Bronk et al., 2018).

In addition, Hartanto et al. (2020) showed that having a purpose in life reduces the effect of childhood emotional abuse and neglect on depressive symptoms later in life. This highlights the important role played by purpose in building resilience, coping against adverse life events, and psychological well-being. Purpose may have played a similar role for adolescents during the COVID-19 pandemic, helping young people cope and build resilience during a pivotal time in their development in identity through a global pandemic's increasing stressors.

Pandemic situation in Perú

The pandemic has affected communities and countries across the globe in contrastingly complex ways. For example, Peru, the country of focus for this study, had a particularly strict lockdown for the first 100 days of the pandemic. Children and adolescents were prohibited from leaving their houses and seeing their friends or family members living outside of their households. Lockdowns were enforced by military personnel who patrolled the streets and kept a vigilant watch. The country suffered high case counts, deaths, and significant economic ramifications (Guazzelli Williamson et al., 2022).

During this time, adolescents could not leave their homes and attended school remotely. The pandemic had severe impacts on key aspects of adolescent development: it disrupted education, socialization with peers, and opportunities for autonomy. In addition, it brought about uncertainty and worry about health, money matters, and future prospects. This was especially true for the sample we work with who are in low- and middle-income urban settings.

Purpose in the pandemic

During challenging periods, a sense of purpose can serve as a source of resilience. For instance, research conducted with youth in Greece during a financial recession revealed that having a sense of purpose was associated with increased optimism, resilience, and positive future expectations (Bronk et al., 2018). Furthermore, youth with purpose focused on their friends, family, and community to maintain a positive future expectation.

In addition, a study specifically conducted during the COVID-19 pandemic found that 18- to 93-year-olds with a strong sense of purpose displayed a greater willingness to get vaccinated, even after considering demographic factors, political affiliation, and psychological well-being (Hill et al., 2021). This

suggests that a profound sense of purpose might play a pivotal role in promoting behaviors that foster resilience, even in the face of unprecedented challenges.

It is thus important to investigate prosocial purpose which are purposes related to positive social behavior intended to benefit other people or society. During the COVID-19 pandemic, this was a potential source of resilience in dealing with the challenges faced by Peruvian adolescents during their strict lockdown. It is important to investigate this question in adolescence given the centrality of purpose to adolescent optimal development (Bronk et al., 2018).

Current study

To date, most research on prosocial purpose has focused on populations in the Global North. Furthermore, there is scarce literature that investigates demographic differences in prosocial purpose (Malin et al., 2019). In addition, empirical studies on the impact of extreme adversity, such as the COVID-19 pandemic, are limited (Burrows & Hill, 2020). Thus, the current project had the aim to gain more insights into youth's perspectives and qualitatively analyze whether (and in which ways) youth perceived that the pandemic transformed their purpose.

Method

Participants

Participants were students from 63 Innova School sites across Peru (grades 6-11), a growing network of private schools designed to support students of emerging low- and middle-class families in Latin America (Magis-Weinberg et al., 2021). Our team offered six surveys to all students who took part in the curriculum in April/May 2020. For this project, we only included the data from participants who completed lockdown week nine surveys. These surveys correspond to the week of May 11, 2020. A total of 2,563 adolescents in Peru participated, and all measures were delivered remotely via Qualtrics as a part of the advisory period of the regular school curriculum. Schools notified parents of the data collection ahead of time, and parents could withdraw their children from the study at any time. Ethics approval was granted by the university human subjects committee.

Procedure

After providing demographic information, participants completed a self-report survey on adolescent purpose. The survey was delivered remotely via Qualtrics as part of the advisory period of the regular school curriculum. Our team collected the data during the week of May 11, 2020, corresponding to lockdown week nine. Following the data collection process, the final sample for analysis consisted of 987 participants, with 54.3% of them being girls. It is worth noting that 20% of the initial responses were considered uninformative and were not used in the analysis.

Measures

Adolescents' self-reported data was collected using the Prosocial Youth Purpose Scale (PYPS; Malin et al., 2014) which is provided in Appendix A. Participants were asked to select their top three goals from a list of 10 goals, which included five beyond-the-self-oriented goals (e.g., "Improve lives of others") and five self-oriented goals (e.g., "Live life full of fun"). Following goal selection, participants rated their level of engagement and commitment to each chosen goal using a six-item scale. Each item on the scale was rated on a five-point scale, ranging from "strongly disagree" to "strongly agree". The questionnaire and its translation to Spanish are available in Appendix A. Following the PYPS questionnaire, participants were asked to reflect on *How have your goals changed during the pandemic?*² with an open-ended response. The short answer responses were analyzed to understand how youth's purpose had changed with the pandemic. The student's short answer responses were coded in Excel. One member of the research team and another member of the research team independently analyzed a random subsample (n=100, 10%) of the total responses (n = 987). Qualitative data were analyzed using a thematic analysis approach to identify common themes. Themes were discussed and agreed upon amongst all authors. Then, students' responses were reread and tagged with the themes to help identify similarities or stand-out responses in their reasoning. Coders independently analyzed the remaining responses (90%). Cohen's Kappa was used after themes were finalized and coded for each participant to determine inter-rater reliability.

Results

Qualitative Results

In this section, I present themes identified in participants' reflections on how the pandemic impacted their purpose. The themes were not mutually exclusive in the participants' responses. Eight themes emerged from the analyses which are outlined below in [Table 1](#).

Self-Perspective Shift

The most prominent theme that emerged from the participant's responses was how the pandemic led to a reevaluation of their goals and perspectives. Many participants expressed a shift in priorities and new outlooks, primarily at an individual level. One participant remarked, *"My goals and purposes changed a lot because I think that the pandemic made me see more realities and feel more empathy for those who have less, generating in me a greater social consciousness than I had before, and I set out to change my way of thinking to later be able to contribute to the world."*³

2 ¿Cómo han cambiado tus metas o propósitos durante la pandemia?

3 "Mis metas y propósitos cambiaron mucho pues creo que la pandemia me hizo ver más realidades y sentir más empatía por los que menos tienen, generando en mí una conciencia social mayor a la que antes tenía y me propuse cambiar mi forma de pensar para más adelante poder contribuir al mundo"

Table 1. Description of Emerging Themes

Theme	Description	Percentage of participants who mentioned this theme	Inter-rater reliability (Cohen's kappa)
Self-Perspective Shift	Goals and purpose have changed/shifted due to the pandemic	32.1%	0.751
Self-Centered Goal-Oriented	Goals and purpose focus on benefiting self	16.2%	0.698
Negative Impact	Goals and purpose have been negatively impacted by the pandemic	12.8%;	0.895
Prosocial Goal-Oriented	Goals and purpose focus on helping others, community, and the world	8.6%	0.788
Education	Goals and purpose focus on individual's education	5.7%	0.824
Family	Goals and purpose focus on individual's family	4.1%	0.864
Health	Goals and purpose focus on individual's health and other's health	1.2%	0.639
Uninformative	Broad, uninformative statements on individual's goals and purpose during the pandemic	19.3%	0.837

Another participant mentioned a significant shift in their life goals due to the pandemic, stating, *"They have changed because I wanted only one thing in life before, but with the passage that I am growing up and because of this pandemic gave me a lot of time to think about what I really want in life and not what others want me to do."*⁴

For some participants, the pandemic sparked a deeper sense of reflection, not only on their individual aspirations but also on their relationships and future. One participant shared, *"Before, my worries and goals consist of me and my future life. Now, my concerns involve my family, my friends, the current situation, and my future. Not much has changed, but I feel that the pandemic has made me reflect a little and improve as a person."*⁵

Self-Centered Goal-Oriented

The second theme that emerged focused on participants' priorities concerning their individual needs. Some of the quotes suggested a change in priorities due to the pandemic, while others reflected a consistent focus on personal goals and desires.

One participant expressed their aspiration for a stable job and a peaceful life, stating, *"I want a stable job that can pay for what I need, and I want to live peacefully."*⁶

⁴ "Han cambiado debido a que antes quería una sola cosa en la vida, pero con el paso del tiempo estoy creciendo y por esto de la pandemia me dio mucho tiempo para pensar en lo que verdaderamente quiero en la vida y no en lo que los demás quieren que haga"

⁵ "Antes, mis preocupaciones y metas consistían en mí y mi vida futura. Ahora, mis preocupaciones involucran a mi familia, mis amigos, la situación actual y mi futuro. No han cambiado mucho, pero siento que la pandemia me ha hecho reflexionar un poco y a mejorar como persona"

⁶ "Quiero un trabajo estable, que pueda pagar lo que necesito y quiero vivir tranquilo"

Another participant mentioned a newfound appreciation for living life to the fullest, saying, *“They have changed because I could see that life is short and you should enjoy it to the fullest; in my case, I want to have many adventures.”*⁷

In the context of the pandemic, some participants highlighted their preference for pursuing activities that aligned with their personal interests rather than seeking validation from others: *“Now I like to do more things that I like and not things that people like.”*⁸

Negative Impact

The dominant characteristic of this theme was the negative impact the COVID-19 pandemic had on various aspects of the students’ lives, including their goals, social relationships, and overall well-being. Participants expressed feelings of hopelessness, loss, and uncertainty.

One participant shared their sense of despair, stating, *“Before, I had goals and purposes, now I have nothing, I don’t want anything anymore.”*

The restrictions imposed by the pandemic significantly affected social interactions and enjoyment for some participants. One participant mentioned, *“Well, I think now because of the pandemic, I can no longer make friends or have fun because I can’t go anywhere.”*⁹

Additionally, the pandemic-induced uncertainty took a toll on participants’ confidence in achieving their goals, with one participant expressing fear of failure, *“I’m dealing with feeling able to accomplish the things I set out to do, I’m afraid I won’t.”*¹⁰

Prosocial Goal Oriented

Contrasting the self-centered theme, this category highlighted participants’ priorities focused on helping others, contributing to the community, and making a positive impact on the world.

One participant shared how their perspective shifted from self-focused to more inclusive, stating, *“Before, I didn’t think much about others and focused more on me, now my purposes are for everyone, including myself.”*¹¹

Another participant expressed a newfound empathy and desire to give back, saying, *“So I’ve taken a more empathetic position about the world, and I’d like to contribute something to give back a little bit of what the world has given us.”*¹²

7 “Han cambiado porque pude ver que la vida es corta y debes disfrutarla al máximo; en mi caso, quiero tener muchas aventuras”

8 “Ahora me gustaría hacer más cosas que me gusten a mí y no cosas que le gusten a las personas”

9 “Antes tenía metas y propósitos, ahora no tengo nada, ya no quiero nada”

10 “Pues yo creo que ahora, por producto de la pandemia, ya no puedo hacer amigos o ya no puedo divertirme porque no puedo salir a ningún lugar”

11 “Estoy lidiando con sentirme capaz de poder realizar las cosas que me propongo, siento miedo de no lograrlas”

12 “Antes no pensaba mucho en los demás y me enfocaba más en mí, ahora mis propósitos son para todos incluyéndome a mí misma”

13 “De manera que he tomado una posición más empática sobre el mundo y me gustaría contribuir algo para devolver un poco de lo que el mundo nos ha dado”

The pandemic also served as an eye-opener for some participants to the global issues, inspiring them to consider how they can contribute to positive change: *"Thanks to the pandemic, I had a new vision of how many problems there are in the world, and if I want to help the world and its people, maybe I should change my goal a little bit."*¹⁴

Education

Given that the survey was conducted in an educational context, this theme highlighted participants' priorities focused on their education.

One participant mentioned that the pandemic shifted their focus to their academic pursuits and created additional stress: *"Now with the pandemic, my biggest focus has been school, and sometimes I feel stressed, so I get away from my trusted friends."*¹⁵

The virtual learning environment also provided new opportunities for participants to explore courses that align with their goals, as one participant mentioned, *"I began to imagine big, and now with virtuality, I consider that it is much easier to take courses that help me meet goals that I did not have planned to meet before."*¹⁶

Another participant shared how the pandemic made them reassess their academic ambitions and set a clear goal for their future, saying, *"Before the pandemic, everything was fantasy; after the pandemic, I had a goal that is to get good grades to make it easier to get into college."*¹⁷

Family

Within this theme, participants expressed their priorities focused on their family. The strict lockdown measures made family interactions even more crucial, with family members becoming the primary source of in-person interaction for many participants.

One participant emphasized their desire to support their family in the future, acknowledging their family's efforts and wanting to provide comfort and relieve their worries: *"I feel that I have more need to support my family when I am an adult because I observe the effort they make, and I want to give them comfort and discard their worries."*¹⁸

The pandemic provided an opportunity for participants to strengthen their communication with family members and share their aspirations for the future: *"They have changed because now that I had more communication with*

14 "Gracias a la pandemia, tuve una nueva visión de cuántos problemas hay en el mundo, y si quiero ayudar al mundo y a sus personas, tal vez debo cambiar mi meta un poco"

15 "Ahora con la pandemia, mi mayor enfoque ha sido la escuela, y a veces me siento estresada, por lo que me aílo de mis amigos de confianza"

16 "Empecé a imaginar en grande y ahora con la virtualidad, considero que es mucho más fácil tomar cursos que me ayuden a cumplir metas que antes no tenía planeado cumplir"

17 "Antes de la pandemia todo era fantasía, después de la pandemia, tuve un objetivo que es sacar buenas notas para que sea más fácil entrar a la universidad"

18 "Siento que tengo más la necesidad de apoyar a mi familia cuando sea adulto, porque observo el esfuerzo que ellos realizan y quiero brindarles comodidad y desechar las preocupaciones"

my mother, I was able to tell her my goals, and I know that there are many things that I'd like to fulfill in the future, and now I am very clear about what my goals are."¹⁹

Moreover, the pandemic led some participants to recognize the significance of familial support, inspiring them to reciprocate that care in the future: *"Now, I've realized how much my family cares about me, that's why when I grow up I want to do the same for them and support them whenever they need it."*²⁰

Health

The least frequently mentioned theme focused on how the pandemic prompted participants to prioritize their own and others' health.

One participant highlighted a shift from a focus on economic stability to prioritizing their family's well-being: *"Before I cared more about the economic stability of my family, but now, I care more about their health."*²¹

For some participants, the pandemic served as a wake-up call to pay more attention to their physical health, which they may have neglected before: *"They have changed a little because before I didn't look so much at my physical condition, and during the pandemic, I was in my house and focused more on my physical state."*²²

Furthermore, the pandemic made participants recognize the importance of mental health, and they expressed a desire to promote stable mental well-being for themselves and others: *"I realize that mental health is very important, and one of my goals is that everyone has a stable one since most of the people I know, including me, do not have one, and it is not pretty."*²³

Uninformative

Around 20% of the answers were short and uninformative. These were excluded from further analyses and interpretation.

Discussion

The aim of the current study was to explore Peruvian adolescents' prosocial purpose during the early stages of the pandemic (May 2020) using qualitative analysis. To our knowledge, this is one of the first studies on purpose carried out with a Peruvian sample. To date, the majority of studies focused on prosocial youth purpose have been carried out in the Global North.

Along with Prosocial Goal-Oriented, more specific themes where participants showed their ability to prioritize Education (5.7%) and Family (4.1%) were less common and didn't prioritize as much as Prosocial Goal-

19 "Han cambiado debido a que ahora que tuve más comunicación con mi madre, le pude contar mis metas y me enseñó que hay muchas cosas que me gustaría cumplir en el futuro y ahora tengo muy claro cuáles son mis metas"

20 "Ahora, me he dado cuenta de cuánto mi familia se preocupa por mí, es por eso que cuando sea grande quiero hacer lo mismo por ellos y apoyarlos siempre que lo necesiten"

21 "Antes me importaba más la estabilidad económica de mi familia, pero ahora, me importa más su salud"

22 "Han cambiado un poco porque antes no me fijaba tanto en mi estado físico y en la pandemia, al estar metido en mi casa, me centré más en mi estado físico"

23 "Me doy cuenta de que la salud mental es muy importante, y una de mis metas es que todas tengan una estable, ya que la mayoría de personas que conozco, incluyéndome a mí, no tienen una y no es bonito"

Oriented. This is most likely due to the limitations caused by education disruption and lack of in-person interactions; thus, they were able to focus on more general priorities like Prosocial goals and self.

It was also found that family priorities could be considered a Prosocial Goal-Oriented theme; however, since Latin America has a collectivist society and the Latino culture promotes familism, promoting behaviors such as living near, interacting frequently, and actively participating in networks of mutual assistance, we decided it was important to include Family as its own theme. As a result of being isolated from others outside the home and spending most of their time with family, the study was more specific in describing how the pandemic affected participants' family dynamics and priorities. It is important to highlight that families with high levels of familism, which value close relationships and feel a sense of closeness and support, can experience significant psychological health benefits (Campos et al., 2014). This aspect becomes particularly crucial as a protective factor during stressful times, such as the COVID-19 pandemic in Peru. This theme might not have been one of the frequently recurring themes, but we were able to see the positive impacts of participants having closer relationships with family members, noticing their family's efforts, and wanting to improve for not only themselves but their families too.

Additional findings show that half the students reported that the pandemic had made them shift their personal goals and perspectives about life. Participants focused mainly on themselves through increased self-reflection and re-evaluation of goals which can be attributed to the increase in isolation from large in-person opportunities due to the strict lockdown. As pointed out by Hartanto et al. (2020), purpose plays a crucial role in building resilience, coping with adverse life events, and promoting psychological well-being. In light of this, our data reveal that Peruvian youth demonstrated an impressive ability to adapt their goals and priorities to accommodate the challenges of living through a pandemic, effectively discovering where their true values lie.

Along with Self-Perspective Shift and Self-Centered Goal-Oriented, participants faced Negative Impacts. Due to extreme circumstances caused by the COVID-19 lockdown in Peru, it is understandable that the third most common theme was Negative Impacts. Even so, it is important to note that the majority of participants were able to adapt and find new goals, rather than allow negative impacts to interfere with their goals and purpose in life. They were able to show resilience.

An important point to note is that Health was the least common theme youth prioritized during the peak of the pandemic. This is quite surprising as the pandemic impacted both health uncertainties and an increase in fatality rates. However, this does not mean health was not considered or prioritized at all, but it is interesting to see where concerns surrounding health stood and could be the focus of additional research that explores many shifts in these priorities after May 2020. It is also important to note that the majority of concerns involving health were based on mental health. This could have

been due to the isolation caused by the lockdown that affected their mental health, the stress of fatality rates, or the sudden extreme change in their extreme environment. Adolescence is a critical time for the development of purpose, and times of extreme uncertainty such as the COVID-19 pandemic potentially caused emotional responses that allowed youth to act on their concerns and reflect on the social and moral values they internalized. They then were able to respond to things that upset or energize them, and thus their emotional responses develop into purpose (Malin et al., 2017).

Furthermore, the impact of institutions like schools on the development of purpose cannot be understated, as they play a crucial role in providing opportunities for adolescents to engage in meaningful sustained activity in pursuit of beyond-the-self concerns and interests (Moran et al., 2013). However, the COVID-19 lockdown presented significant challenges in this regard, as it imposed limitations on in-person interactions and disrupted traditional educational practices. These restrictions may have hindered the ability of youth to focus on beyond-the-self concerns and interests given their altered circumstances.

Additionally, it is important to recognize that social isolation and ostracism resulting from situations like the COVID-19 lockdown can have a profound impact on one's sense of purpose. Research has shown that such conditions can lead to feelings of disengagement from life (Burrow & Hill, 2020), potentially exacerbating the challenges faced by adolescents during this unique period. Understanding these effects on purpose can inform future interventions and support mechanisms aimed at helping youth navigate difficult circumstances and maintain a sense of direction and meaning in their lives.

Even so, through this study, we found that the Prosocial Goal-Oriented theme, where participants' priorities were focused on helping others, community, and the world, was not the most frequent but still held significance, ranking fourth out of eight themes. This suggests that Peruvian youth were able to demonstrate empathy, think about prioritizing others, and recognize important global issues despite their isolated environment, showcasing a genuine desire to make a positive difference in the lives of others.

This ability to engage in thinking beyond-the-self could be attributed to Latin America's collectivist culture. Studies like Kiang and Fuligni (2009) have highlighted that Latin American adolescents often possess stronger values and greater expectations regarding their duty to assist, respect, and support their families compared to their peers with European backgrounds. The centrality of serving others and the importance of family within the Latino community likely played a role in shaping the priorities of Peruvian youth, enabling them to maintain a sense of purpose and a willingness to help their community and the world even amidst challenging circumstances.

Strengths

A strength I had throughout this study was that we included a large and diverse sample of Peruvian adolescents from low- and middle-income households. In order to create a foundation for information regarding this underserved population in research studies and literature, it was essential that we had both a large and diverse sample of Peruvian adolescents. In addition, I was able to provide insight into COVID-19's impact on Peruvian adolescents and provide information on how they perceived purpose during their strict lockdown conditions. We were also able to collect data at the beginning of the pandemic and analyze the data at its height. This created a starting point for this population's perceived purpose during the peak of the pandemic. It may also leave room for future research to examine how they perceived purpose during or after the lockdown.

Limitations

One potential limitation of our study lies in the subjective nature of thematic analysis. Each participant's response was coded based on the authors' interpretation of which of the eight themes best described the participant. This subjectivity introduces the possibility of differing opinions and answers between coders. Each participant's response was coded according to each author's opinion as to which theme of the eight themes best describes the participant. Due to the discrepancy in opinions and answers provided by participants, certain themes may result in differing opinions and answers between coders. However, high inter-rater reliability on the training set and the opportunity to resolve disagreement minimizes these concerns.

Another limitation we faced was not having or gathering data before the pandemic. With this, we could not make claims of *change* due to not having data before the pandemic to compare with data continuing after the peak and aftermath of COVID-19. Using data before the pandemic could have played a key role in showing the shift from pre-pandemic goals to post-pandemic. Still, these cross-sectional data from a large population of adolescents who are typically hard to reach, contribute to diversifying our understanding of a key developmental task in this age group.

Conclusion

Through this research, we identified a total of eight themes that emerged in relation to the impacts of the pandemic on youth's goals. Among these themes, three recurred prominently: (1) Self-Perspective Shift, (2) Self-Centered Goal-Oriented, and (3) Negative Impact. With these themes, we discerned how youth perceived the pandemic changed their purpose in life. This entailed overcoming stressful situations like a global pandemic and lockdown. In addition to further exploring purpose as one of the main developmental tasks of adolescence through qualitative methods.

Overall, this research offers a greater understanding of the impacts of COVID-19 on adolescent development in Peru, which can inform future research with this population. Also, creating a base of knowledge of Peruvian

adolescents can inform future work on other underserved populations in prosocial purpose. It is also crucial to add another perspective on purpose as it can help bring awareness to potential research that can be utilized to support communities like Peru.



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Appendix A: Prosocial Youth Purpose Scale (Malin et al., 2014)

Think about the things you want to accomplish in your life. From the items listed below, choose up to three that come closest to describing the goals that are most important to you.

English

1. Be physically strong or athletic
2. Improve the lives of others
3. Live an adventurous life
4. Serve God or a higher power
5. Provide support for my family
6. Create, invent, or discover things that will make a difference in the world
7. Live a life full of fun
8. Have a high paying career
9. Contribute to solving a problem in the environment or society
10. Have good friends

Spanish

1. Ser fuerte físicamente o atlético(a)
2. Mejorar la vida de otros
3. Vivir muchas aventuras
4. Vivir de acuerdo con mis creencias
5. Apoyar a mi familiar
6. Crear, inventar o descubrir cosas que van a hacer un cambio en el mundo
7. Vivir una vida llena de diversión
8. Tener un puesto profesional que me pague mucho
9. Contribuir a solucionar un problema en el medioambiente o la sociedad
10. Tener buenos amigos y amigas

The next questions ask about some of the goals for your life that you ranked as most important.

Fill in the blank with items selected above. Complete the scale separately for each item. (5-point scale: “strongly disagree-strongly agree”)

1. I have a plan for how I will.....
2. In my free time, I am usually doing something to.....
3. I feel that it is my mission in life to.....
4. Every week, I do things to work on my goal to.....
5. When I’m an adult, one of my most important goals will still be to
6. The main reason I want to is so I can be someone who makes a positive contribution to the world.

Six item questions to measure the commitment of each selected goal:

1. “I have a plan to how I will achieve the chosen goal”
2. “In my free time I engage with this goal”
3. “I feel that it is my mission to in my life to have this goal”
4. “Each week I do something to engage with this goal”
5. “When I’m older this will still be my most important goal”
6. “The reason why I want to engage and commit to this goal is to contribute positively in the world”

RESEARCH ARTICLES

Listening to Doulas in Southern Oregon: Exploring Motivations and Experiences of Birthworkers

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Doulas (non-medical birth support professionals) have been fixtures in the culture of modern births for decades. Now, they are often the subject of news articles and scholarly research in light of the current U.S. maternal mortality crisis. Until recently, doulas have been studied for their health cost saving potential and their known benefits to the families they serve, but the doulas' experiences and motivations for coming to the work have not been explored. This qualitative anthropological research study was conducted from 2021-2022 for the author's undergraduate capstone project and centered on in-depth interviews with doulas practicing and living in Southern Oregon communities. Utilizing constructivist grounded theory, Indigenous research methodologies, and the author's firsthand experiences as a Traditional Health Worker Doula, this study illuminated the challenges doulas, especially those of color, face in the rural areas of the state. It also revealed that most of the doulas interviewed had experienced trauma giving birth. The purpose of this research was to better understand what doulas have experienced and what their challenges are in order to advocate and support the nascent doula workforce. As a result, this will contribute to the promotion of birth equity in the communities they live and work in.

Introduction

The U.S. maternal mortality ratio (deaths/100,000 births) is *the highest* (17.4) among industrialized countries, according to the World Health Organization. Ironically, the U.S. also spends more than any other country on healthcare.² These mortality ratios³ are even more concerning when considering the racial or ethnic disparities seen among birthing people in the United States. The higher incidences of deaths among Indigenous and African American birthing people are the legacy of enslavement and settler colonialism, as those who have been systemically oppressed grapple with the effects toxic stress, racism and generational traumas. These statistics have inspired a movement to improve services as well as outcomes for birthing people.

In 2012, HB 3311 was introduced with the aim of providing low-income families access to doula care with coverage for those with Oregon Health Plan (OHP) insurance plans, becoming the first state in the country to do so.⁴ This is important, as OHP is billed for *nearly half* (45%) of all births in the state each year; however, many barriers hinder the progress towards creating a

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2 Joseph L. Dieleman et al., "US Spending on Personal Health Care and Public Health, 1996–2013," *JAMA* 316, no. 24 (December 27, 2016): 2629, <https://doi.org/10.1001/jama.2016.16885>.

3 While the terminology used is *maternal mortality ratio*, I would like to state to the reader that not all people who give birth identify as women, mothers, or female; besides this term being used for informational purposes, I strive to use *birthing person* in addition to mother or woman for more inclusivity.

4 Oregon Health Authority Office of Equity and Inclusion. *Utilizing doulas to improve birth outcomes for underserved women in Oregon* (Oregon Health Authority Office of Equity and Inclusion Utilizing Doulas to Improve Birth Outcomes for Underserved Women in Oregon, 2012) <https://digital.osl.state.or.us/islandora/object/osl:28454>.

sustainable and thriving workforce of doulas for all families that want them. The current model for reimbursement is two prenatal visits, intrapartum care (labor support), and two postpartum visits.⁵ These doulas, once they complete the process of getting approved to the state registry, are known as Traditional Health Worker (THW) Doulas.⁶ As many other states are currently in the process of adopting similar Medicaid reimbursement models for doula services, they are looking to the successes and failures of the initiative in Oregon. In a 2021 Washington Post article, the progress of the program was described as “*glacial*,” referring to the perceived lack of progress made nearly a decade later.⁷ In 2018, a workforce needs assessment was conducted and a major finding was the lack of doulas in the southern and eastern regions of Oregon, as doulas from those regions accounted for less than ten percent of the total respondents of the survey.⁸ The assessment also explored the many barriers doulas face in their work: low reimbursement rates, the lack of compatibility of doula work with other jobs, lack of adequate trainings, business background needed, and a lack of awareness and support in the community and in the healthcare systems. As most of the respondents were from the Portland metro area, further research on birthwork in rural regions of the state was recommended.⁹ This research begins to fill that gap by interviewing doulas living and practicing in Southern Oregon.

Literature Review

What is a doula?

Doula is a Greek word meaning “female slave” and acts as a modern title for a traditional birth support person.¹⁰ Because of the less than flattering meaning of the title, some people refer to themselves as birthworkers; nevertheless, the word *doula* has come to be known to describe the traditional role of the birth helper for the last few decades. While doulas exist in a gray area of the modern healthcare system (as they are not midwives, nurses, or doctors) the people entering this societal role seek to professionalize it. A doula¹¹ is defined by the

5 Courtney L. Everson et al., *Advancing Health Equity for Childbearing Families in Oregon: Results of a Statewide Doula Workforce Needs Assessment*, (2018), 8-10, [https://www.oregon.gov/oha/EL/Documents/Doula Workforce Needs Assesment Full Report 2018.pdf](https://www.oregon.gov/oha/EL/Documents/Doula%20Workforce%20Needs%20Assesment%20Full%20Report%202018.pdf).

6 The state of Oregon also employs several other Traditional Health Worker types, such as Peer Support Specialists and Community Health Workers; it is worth mentioning that most other THWs enter salaried employment after completing their training and certifications, while doulas do not have that opportunity and are self-employed (unless they are employed at a hospital as a staff doula).

7 Ashley Nguyen, “The State of Doula Care,” *The Washington Post*, March 2, 2021. <https://www.washingtonpost.com/graphics/2021/the-lily/state-of-doula-care/>

8 Everson et al., “Advancing,” 15.

9 Everson et al., “Advancing,” 78.

10 In 1973, anthropologist Dana Raphael used the term “doula,” to refer to a breastfeeding support person. The term was touted by DONA International (the first doula training organization offering certification) to mean “woman helper;” this was later disputed by scholars, as the Greek word “doula” translated means *female slave*. Christina Young, “Professional Ambivalence among Care Workers: The Case of Doula Practice,” *Health* 25, (2021): 307-8.

11 Though there are other types of doulas who inhabit different liminal spaces in peoples’ lives, (such as full-spectrum, death, adoption, and abortion) the focus of this research is specific to those who attend births.

state of Oregon as: “a birth companion who provides personal, nonmedical support to women and families throughout a woman’s pregnancy, childbirth, and postpartum experience.”¹²

Brief History of Birth in the United States

Birth is a transitional life experience that is simultaneously a social and a physiological event. Studies have shown that people vividly remember, even decades later, their birth experience, who was with them and how they made them feel; this emphasizes how the experiences of those giving birth shape their identity, self-esteem, and confidence in parenting for the rest of their lives.¹³ Historically, in the Americas, birth was social event attended by the community midwife and by experienced birth-givers, and usually female family and friends.¹⁴ All births in the then-American Colonies were attended by midwives until the end of the eighteenth century, and men were largely excluded from the birth space until the 1970s, well after male obstetricians began to practice. Until about one hundred years ago, birth took place at home, and over the course of the last century, the medicalized, technocratic model of birth in the hospital became the accepted cultural norm.¹⁵ Cultural experiences of birth in the United States were shaped by religion, the expansion of science and biomedicine, enslavement, and settler colonialism; socioeconomic disparities, racism, public health efforts and surveillance have led to the modern birth landscape.

Doulas as public health interventions

The modern re-integration and reinvention of the role of doula began about fifty years ago, after studies emerged showing that companionship during labor improved the health outcomes for both the people giving birth and their babies. Decades of medical interventions, such as the practice of twilight sleep during the 1940-60’s after feminists and birthgivers pushed for “pain-free” anesthesia-assisted births led to more monitoring and interventions.¹⁶ Subsequently, the unfavorable infant and maternal health that resulted in these practices prompted a resurgence of interest in “natural” birth methods, seeking to re-integrate a holistic model of birth, from the 1970s and continuing today. Researchers in the 1980s, looking into “humanizing birth practices,” found that companionship by both passive observers *and* active support people during labor improved the outcomes of the people giving birth and their babies; they remarked that birth support was commonsense but that should not take away from its sheer importance.¹⁷ Other major findings of more recent

¹² Everson et al., “Advancing,” 6.

¹³ Penny Simkin, “Just Another Day in a Woman’s Life? Women’s Long-Term Perceptions of Their First Birth Experience. Part I,” *Birth* 18, no. 4 (1991): 203–4, <https://doi.org/10.1111/j.1523-536X.1991.tb00103.x>.

¹⁴ Lynn M. Deitrick and Patrick R. Draves, “Attitudes towards Doula Support during Pregnancy by Clients, Doulas, and Labor-and-Delivery Nurses: A Case Study from Tampa, Florida,” *Human Organization* 67, no. 4 (2008): 398.

¹⁵ Nancy Schrom Dye, “History of Childbirth in America,” *Signs* 6, no. 1 (1980): 97–8.

¹⁶ Robbie E. Davis-Floyd, *Birth as an American Rite of Passage* (Berkeley: University of California Press, 1992), 74.

¹⁷ Davis-Floyd, *Birth*, 328.

studies on doula benefits include decreased health care costs, plus “increased rates of spontaneous vaginal delivery, decreased negative childbearing experiences, decreased rates of intrapartum analgesia, decreased average labor length, decrease cesarean section rates or instrumental vaginal delivery, decreased rates of regional analgesia, and decreased rates of low five-minute Apgar scores.”¹⁸

Doulas have the potential to improve the experiences of birthing people in Southern Oregon, as well as their babies. In Klamath County, the infant mortality rates are *double the national average* (10/1,000 births).¹⁹ More comprehensive postpartum support and prenatal education for families is strongly indicated in light of these findings, as well as the development of culturally congruent doulas and midwives to support the Indigenous community in Klamath County. Klamath County has the second highest number of Indigenous residents, according to the US Census Bureau website, with 5% of the area’s population self-identifying as “American Indian and Alaska Native Alone.”²⁰ Located adjacent to Klamath, the Latine population in Jackson County is around 15% (14.9%).²¹ Though national rates have been steadily on the decline, in Oregon *the number of Latine teen pregnancies is triple that of “white” teen pregnancies*.²² With the knowledge of these specific issues, expanding the workforce in the Southern Oregon region with a focus on culturally and linguistically matched birthworkers would undoubtedly provide crucial forms of non-judgmental physical and social support, resource connection and education for families.

Questions and identifying current challenges

A major research question I had at the start of this project, and even before, is *why people enter the doula profession*. As most studies are focused on how doulas improve birth outcomes and save healthcare costs, there is a subsequent lack of research focused on why people are becoming doulas and what their experiences are. Beyond their outcome-based benefits, doulas are valuable resources for tapping into the experiences of people giving birth; they are potentially key informants that are vastly underutilized in the investigation of the reasons mortality rates are so high. From conversations with peers and colleagues in the field, as well as my personal experiences as a doula, many barriers to being a birthworker have been identified. The doula workforce need assessment echoed these conversations and firsthand experiences, revealing that the majority of doulas (76.9%) made *less than the poverty level* for income from

18 Everson et al., “Advancing,” 7.

19 A workgroup, Trends on Thriving, has been assembled to address the IMR; <<https://www.healthyklamath.org/files/index/display?id=178035758268667882>

20 As compared to the state, with less than 2% of the population identifying as Indigenous. These numbers do not include those who identify as multi-racial>.

21 I use the term *Latine* rather than *Latinx* in this article after discussions with Latina colleagues on their personal preferences of terminology. <https://www.census.gov/quickfacts/jacksoncountyoregon>

22 Latina teen pregnancy rate is 9.9/1,000 births, white teen pregnancy rate 3.6/1,000 births. *Latinos in Oregon*, (Oregon Community Foundation, 2016), 22, https://oregoncf.org/assets/PDFs-and-Docs/PDFs/latinos_in_oregon_report_2016.pdf.

doula work, and doulas are only utilized by 6% of expecting families in the U.S.²³ The 2002 publication “Listening to Mothers”²⁴ indicated that among the population of birthing people surveyed, the majority (75%) of respondents knew about doulas and that they had a good understanding of their role; additionally, doulas received the *highest satisfaction rating* out of all perinatal provider types.²⁵ In the study, “Listening to Mothers in California,” most respondents expressed a desire to have doula support in future births, and over 80% of those surveyed who had a doula for a previous birth reported that they wished to have one again for future births.²⁶

Unfortunately, numerous barriers to the work contribute to the problem of not having an adequate workforce of doulas available for all the families who want them. Of the Oregon doulas surveyed in the 2018 workforce assessment, most reported an average of 4-6 hours total for prenatal and postnatal visits per client and the average time spent at a birth was 13-16 hours (this is possibly much more, and this figure does not account for time spent driving, administrative work, and care coordination with clients via text/phone support during pregnancy and postpartum).²⁷ The assessment also highlighted many common themes such as incompatibility of the work with other jobs,²⁸ lack of the needed business background, the process of getting on the state registry and medical billing being confusing and time consuming, and doulas having to be able to afford the costs to provide services (such as fuel for vehicles and childcare) before being reimbursed, which can take months or longer in some instances. This, along with the low reimbursement rate for services recommended by the state (\$350), makes the profession inaccessible to many people of low-income backgrounds. In 2020, COVID restrictions in hospitals have barred or limited access for doulas. For most hospitals, doulas are classified as visitors, not an essential part of the healthcare team (with exceptions in some bigger hospital systems) and subject to restriction as such. This was problematic for the doulas who had been newly trained and needed to attend three births in order to apply to the THW registry, especially.

The current established model for training programs for doulas is a 28-hour workshop in which important topics like trauma-informed care are absent or briefly covered in a short time frame. Furthermore, trainings and other resources in languages other than English are needed, especially Spanish. This is important, as the Latine population in Oregon has increased 72% since 2000

23 Everson et al., “Advancing,” 80.

24 The title of this research study was intended to pay homage to the “Listening to Mothers” research studies.

25 Eugene R. Declercq et al., *Listening to Mothers: Report of the First National U.S. Survey of Women’s Childbearing Experiences*, (Maternity Center Association, 2002), 15-16, https://nationalpartnership.org/wp-content/uploads/2023/02/listening-to-mothers-i_2002.pdf.

26 Carol Sakala et al., *Listening to Mothers in California: A Population-Based Survey of Women’s Childbearing Experiences, Full Survey Report* (National Partnership for Women & Families, September 2018), 27, https://www.chcf.org/wp-content/uploads/2018/09/ListeningMothersCAFullSurveyReport2018.pdf?utm_source=National+Partnership&utm_medium=PDF_Link&utm_campaign=Listening+to+Mothers.

27 Everson et al., “Advancing,” 44.

28 Doulas must be on-call for births, and the unpredictability of when a person goes into labor and how long it lasts is not something most employers are equipped to deal with from employees with scheduled work shifts.

and taking the undocumented as well as seasonal and migrant farm workers into account, this is likely an underestimation.²⁹ Traditional Health Worker Doulas do not receive specialized training as part of the conventional doula training workshop model and are expected to seek them out and pay for them in addition to their basic doula training workshop. Cultural competency and trauma informed care trainings, however, are needed before applying to the THW registry, to competently work with vulnerable populations that are on Oregon Health plan (which may include those who are houseless or homeless, teen parents, or facing mental health or addiction issues).³⁰ Furthermore, gendered and outdated language in trainings and doula communities alienate those who do not identify as women, as well as LGBTQ+, or differently abled birthing people and doulas.

Culturally congruent care has been shown to improve health outcomes for historically marginalized people giving birth and their babies.³¹ In Multnomah County, Oregon there is a thriving Black community doula organization. In Southern Oregon, there is a large Hispanic/Latine and Indigenous population who would benefit from culturally and linguistically congruent doula care. Additional differences between urban areas like Portland Metro and southern regions of the state are that there are fewer people that are spread out over greater distances; Southern Oregon is also grappling with high rates of poverty,³² more specific health issues and less resources for birthing people and their families. Indigenous people in other areas of the country are establishing culturally informed midwifery and doula services that are re-integrating traditional knowledge into their work. Notably, Hummingbird Indigenous Family Services in Washington state, as well as Changing Woman Initiative and Tewa Women United in the Southwestern US, focus on Native American reproductive justice, health, and education. Qualitative research from Canada has also centered on Indigenous doula's efforts to reduce trauma in their tribal communities and reconnect to traditional birthing practices.³³ It is noteworthy that the outcomes of Indigenous birthing people and their babies are comparable with those of African ancestry (much higher rates of mortality and low birth weights than those of European descent) but are not often highlighted in media coverage or news articles on the national maternal

29 Caitlin Ruffenach et al., *Latinos in Oregon*, (Oregon Community Foundation, 2016): 2. https://oregoncf.org/assets/PDFs-and-Docs/PDFs/latinos_in_oregon_report_2016.pdf

30 It is ironic but worth noting that the doulas could provide more insightful care if they themselves are of low-income background but share the same barriers their clients face pursuing doula work, including facing racism and bias within the bureaucratic processes needed to apply to the registry (i.e., background checks, etc.).

31 Martha Paynter et al., "Peer Doula Support Training for Black and Indigenous Groups in Nova Scotia, Canada: A Community-Based Qualitative Study," *Public Health Nursing* 39, no. 1 (2022): 135–45.

32 In Klamath County, for example, 19% of the population lives in poverty, compared with the Portland metro area at 12.4% and at the national level (11.6%). <https://www.census.gov/quickfacts/fact/table/klamathcountyoregon>

33 Jaime Cidro et al., "Putting Them on a Strong Spiritual Path: Indigenous Doulas Responding to the Needs of Indigenous Mothers and Communities," *International Journal for Equity in Health* 20, (2021): 1–11.

mortality crisis. Therefore, more research to explore the problems Indigenous peoples are facing in the U.S. throughout their pregnancies and labors would be helpful to raise awareness around these issues and garner more support.

The purpose of this research was to listen to doulas in Southern Oregon in order to better understand how to support the nascent doula workforce in a rural area while uplifting voices of those not often heard. Points of discussion centered on why they became birthworkers, what their experiences have been, what has surprised them the most in their work, what their goals for the future are and what challenges they encounter while working towards these goals.

Methodology

This qualitative research study was conducted with constructivist grounded theory framework, as well as Indigenous research methods. Grounded theory, since its inception, has been used heavily in social sciences and to guide qualitative research, but there are limitations to this framework. Originally intended lend legitimacy to qualitative research, the theory is used to investigate areas where knowledge was lacking, and asserted that the data would produce a theory, rather than the data being used to “prove” a theory. It leaned on the ideal that researchers should strive to not let their own bias interfere with their research and to let emerging theories stay “grounded” in the data while utilizing comparative analysis.³⁴ Traditional grounded theory was bound by rules that are a hinderance to letting data organically emerge and are at odds with the flexible nature of the method. Because of this, scholars have critiqued the framework and have taken up alternative philosophical approaches to conducting research. Constructivist grounded theory asserts that “theories about social life are constructed rather than discovered” and researchers must be aware of what they bring to the research as well as what they do with it.³⁵

Indigenous research methods call for relational accountability. I am a researcher, but also a birthworker committed to continuing and nurturing relationships in my community. My understanding of birthwork has deepened because of this research process and the knowledge shared with me. I fully intend to continue to collaborate and work together with birthworkers in the community to tackle problems and learn together. To give context here: I am a woman of Scots-Irish, French, Norse, Greek, Italian, Jewish and Indigenous ancestry. I am a sister and a daughter, mother, and wife. I am a friend, student, and teacher. My ancestors were First Nations, Métis, and Inuit peoples, as well as settlers who came to Turtle Island from other lands. I was raised in the Southern U.S., but have lived in Oregon for several years, and I have been a birthworker since 2016. Since I have experienced birth, practiced birth work, and mentored other birthworkers, I am aware of how all of these identities intersect in my research process. I cannot separate myself from the research,

³⁴ Ylona Chun Tie, Melanie Birks, and Karen Francis, “Grounded Theory Research: A Design Framework for Novice Researchers,” *SAGE Open Medicine* 7, (January 2019): 1-2.

³⁵ Janice M. Morse et al., *Developing Grounded Theory: The Second Generation Revisited* (New York: Routledge, 2021), 155-6.

and I have a unique position in this way that makes my experience vastly different than what an outsider's would be. I fully acknowledge this affected my results to some degree. Indigenous research methodologies assert that:

“Knowledge in itself is not seen as the ultimate goal, rather the goal is the change that knowledge may help to bring about. Both paradigms [critical theory and constructivism] share the axiology that research is not seen as worthy or ethical if it does not help to improve the reality of the research participants.”³⁶

The goal of this research is to apply it to curriculum, policy and workforce development to better support and prepare future doulas. Understanding how to do this requires more in-depth inquiry to be explored through interviews, with the goal of exploring the motivations and experiences of people doing doula work, as well as adding to the limited literature available on this topic.

Seven semi-structured, in-depth interviews with doulas in Southern Oregon were conducted for this project, being audio-visually recorded with informed consent forms signed beforehand, and then were transcribed verbatim. Interviews ranged in length from about 30 minutes to one hour. Sampling was convenience-based and nonrandom, as there is a small population of doulas in Southern Oregon. The doulas contacted were known previously from either personal connections or through local doula groups on social media. Purposive over-sampling of four doulas identifying as Indigenous and Hispanic/Latina was used to amplify the voices of historically underrepresented and systemically excluded peoples. Three doulas who identify as being of European descent have also been selected to round out the study, as their perspective is reflective of the population, (the majority of doulas in Southern Oregon, as elsewhere in the U.S., are of European descent). A spreadsheet was utilized to do an initial coding record, then a second coding process was conducted to identify the major, emergent themes and findings. Since the interview questions were focused on identifying the motivations, barriers and goals of doulas, these primary elements served as a guide to the data analysis and coding processes. Based on past conversations, extensive literature review, and first-hand experience, I expected themes emerging from these interviews would include: the grey area of doula profession in society and healthcare systems, lack of financial and cultural value of doulas, a desire to reconnect to traditions, roles, and rituals around birth, a “calling” to the work, and motivations to improve conditions of future birthing people after experiencing trauma themselves.

Anonymity of collaborators, as well as protection of all data is key with the small community in consideration. Written informed consent forms were obtained prior to each interview. The informed consent form obtained from interviewees included clear information for collaborators on being able to decline or withdraw from participation at any time, and that they agreed to be

³⁶ Shawn Wilson, *Research is Ceremony: Indigenous Research Methods* (Halifax: Fernwood Publishing, 2008), 37.

audio-visually recorded. This project was reviewed and approved by Southern Oregon University's Institutional Review Board prior to interviews being conducted. This research adheres to the American Anthropological Association's ethical guidelines, further reinforcing the strong ethical stance for conducting the research, especially in light of choosing to interview potentially vulnerable populations of systemically excluded people. All identifying information was removed prior to the results being shared to ensure anonymity. Before sharing this article with others, it was sent to collaborators for their approval and to determine if there were any misunderstandings or anything they would prefer to be left out. Then, the article was further reviewed by advisors, faculty, and peers. By adhering to these practices, I seek to demonstrate my commitment to use my background as a strength and source of insight and minimize the impact of personal bias, which is integral to successfully producing quality, valid results.

Findings

Motivations

| *"I want to help people."*

To conduct this research study, I had to personally unpack why I had entered birthwork while asking other doulas the same question. From this research, along with conversations I've had with peers during my seven years in the work, I have identified that others seek further "epistemic exploration through further involvement with childbirth," meaning a desire to enter the birthwork field following either a *very positive* or *very negative* first-hand experience.³⁷ Of the doulas interviewed in Southern Oregon, *the majority* (57%) reported that they had traumatic or negative experiences when they had given birth. One doula expressed, "I feel like if I would have had a doula, things would have been different" which reveals the common occurrence of doulas having negative experiences themselves giving birth. Filling a gap or a perceived need in the community was what called many of the doulas that I interviewed to the work. Some of the doulas described a lack of support in their own births and postpartum periods. Two doulas shared that they experienced a lack of support during pregnancy losses through miscarriage, stillbirth, and abortion; they went on to provide education on these topics through doula work and creating support groups and trainings. Not having an open avenue for support in these "hush-hush" experiences in which others were not willing to engage in a dialogue because of social stigmas around the uncomfortable topic of loss motivated these doulas to create this support where they saw a "broken system."

³⁷ Davis-Floyd observed that many of the people she interviewed about their labors went on to become nurses, lactation consultants, childbirth educators and similar perinatal workers (after having either a very negative or very positive experience). Davis-Floyd, *Birth*, 248-9.

In talking to doulas, I noted that more positive birth experiences were reported by doulas in the Rogue Valley region of Southern Oregon, and more negative experiences reported by doulas in Klamath County. There is a connection to be made with the availability of services, providers, and resources in each area (though technically in the same region of the state). Additionally, the availability or lack of culturally congruent care providers and services contributes to these doulas' experiences. The most significant finding in this theme is that *all* Indigenous doulas interviewed reported having a negative or traumatic experience giving birth. The Indigenous doulas also expressed having a deep lack of confidence in the local hospital system from experiencing racism and obstetric violence. This is all too common of an experience, as one collaborator lamented, "we [Indigenous peoples] are just so used to being mistreated." Providing culturally informed and congruent support to improve safety and reduce the possibility of trauma for others is a strong motivator for Indigenous doulas.³⁸ Though this is a disheartening finding, there is a silver lining in the motivation of these doulas to spark and lead change in their communities by providing safe and culturally congruent care and services.

One collaborator had a doula herself as a teen giving birth and it made an extremely positive and lasting impact on her afterwards. Being able to be with her own daughter during her birth many years later was a way to reciprocate and continue the legacy of birth support within kinship systems. Another collaborator described one of her most fulfilling experiences as a doula, which was to mentor and support a fourteen-year-old mother, giving her encouragement that contributed to her giving birth unmedicated but also to become a confident mother as a young person. This mirrors my own motivation for coming to doula work, as after a traumatic experience birthing my first child at eighteen, I had doulas at my second and third births which were very different and very healing experiences; I was then asked by friends to support them. This is a major motivation for many doulas, to reciprocate the support and knowledge they've received themselves.

Having a history of performing care work was a major theme across multiple interviews, with one doula describing herself as being "motherly," and others discussing how they had or still served in a "helper" or "caretaker role"; others talked about being the older sibling and how that role prepared them for birthwork. I am also the older sister. A few of the doulas also mentioned having an interest in babies or birth from a very young age, even before having children themselves or attending births as a doula. One doula shared that it was her family lineage, as her grandmother was a traditional *partera* (midwife) in Mexico and she was honoring her by also being a birthworker. Some doulas talked about being able to support their own family members competently as a motivation for taking doula training, and in some ways filling a traditional

38 Many First Nations doulas in Canada reported coming to the work after traumatic experiences giving birth themselves. Caroline Doenmez et al., "Heart Work: Indigenous Doulas Responding to Challenges of Western Systems and Revitalizing Indigenous Birthing Care in Canada," *BMC Pregnancy and Childbirth* 22, (2022): 1–14.

role of a sister, auntie, or grandmother. Overlap of an existing skillset was noted in several interviews, as other roles played by collaborators in the past or present (working in healthcare, hospitality, or service-based work) were viewed as utilizing the same type of intrapersonal skills as doula work.

Experiences

“The job of a doula? It’s not a job, it feels funny to say that...no, it’s a lifestyle.”

Many doulas describe what they do as their life’s work or as a lifestyle, rather than a job; one that can deplete much of their energy and emotional reservoirs. The levels of experience varied across the group of doulas interviewed, from newly trained to practicing for a decade; one doula had not yet attended a birth, while another had attended nearly three hundred. Regardless, the descriptions of performing birthwork are similar in consideration of its physical and emotional aspects. Many of the doulas expressed that performing birthwork was a different kind of experience, describing the “birth high” and adrenaline, “holding all the emotions of all the people in the room” and then afterwards, “the exhaustion kicking in.” Internalizing other people’s emotions, and then having to process them afterwards, was an experience many doulas recounted.

Doulas and their clients share a unique relationship in which mutual trust and rapport are instrumental in fostering autonomy and satisfaction of experience by active involvement in decision-making:

“The families themselves are learning to become advocates and they are supporting us, and then also us supporting them learning how to be advocates.”

This trust and reciprocity of trust and care with doula-client relationship was another major theme found across all interviews.

Surprises

“Every birth is just so different.”

When asked what surprised them most about birthwork, the above revelation was a common response. The unpredictability of birth itself as observed by doulas is in stark contrast to the mindset of obstetricians and nurses, who see it as a process they can control with technological means and comparison to a “standard” norm of progression. Since supporting unmedicated births is a common focus of most conventional doula trainings, it can set up doulas entering birth spaces for feeling like “failures.” One doula mentioned that she wished she was able to “prevent” the commonplace interventions in birth for their clients. Doulas’ experiences can tend to differ greatly from what they expect when starting out in birthwork. For example, a doula said that she held babies less than she had originally thought she would. One doula also mentioned how surprised they were that they had not yet attended a homebirth, expecting they’d support more “natural” births, when

in reality, they experienced mostly intervention-heavy, medicalized births in hospitals. A doula expressed how surprised she was for gratitude she received from clients, remarking:

| “It’s weird to be thanked for caring.”

Challenges

When asked what challenges they faced in performing their work, one doula responded: “I think it’s just me.” Imposter syndrome was a major and unexpected theme to emerge during the interviews. One doula wondered “am I a birthworker yet?” when asked about why they were inspired to be one, even though they had completed training and attended births. Many discussed that they felt the standard pedagogy of doula trainings did not adequately prepare them for the work. The Indigenous doulas expressed that they did not feel that other people in trainings or instructors were like them, and some of the curriculum did not apply to them or align with their values and approach to the work. Settler colonialism, forced assimilation, the introduction of Christianity and residential schools have contributed to the lost generations and the severing of the chain of traditional birth knowledge transmission by force. Younger generations trying to reconnect with this knowledge are often met with opposition or just an absence of it altogether. The doulas noted that some elders see the traditional practices to be outdated or even harmful, and they face lateral and external oppression when seeking to create a culturally informed doula practice. They also discussed a lack of support in their desire to go back to a more “natural” approach to birth. As Indigenous bodies and land have been colonized, seeking to decolonize birthwork is a powerful, political act of reclaiming sovereignty.³⁹ More support is strongly recommended for these birthworkers and their efforts to create a safe and culturally informed birth experience for Indigenous people in Oregon.

In connection with the training discussions, the need for mentorship and being able to “shadow” more experienced doulas was a common thread head in these conversations. Since much of a doula’s skillset centers on observation and experiential learning outside of a training or classroom and was historically passed on from generations in this manner, it is recommended that hospitals be willing to support the implementation of new doulas shadowing more experienced doulas. Additionally, navigating certification requirements, which can vary greatly and be confusing, and understanding insurance requirements and systems were other major challenges.⁴⁰ Marketing, becoming self-employed, taxes, creating websites, writing contracts and “getting your name

39 Sarah Ireland et al., “Indigenous Doulas: A Literature Review Exploring Their Role and Practice in Western Maternity Care,” *Midwifery* 75, (2019): 54, <https://doi.org/10.1016/j.midw.2019.04.005>.

40 Christina Young, “Professional Ambivalence among Care Workers: The Case of Doula Practice,” *Health* 25, no. 3 (2021): 306–21.

out there” were frequently mentioned challenges. As one doula explained, “If I had known this before, I would have gone to business school” and another shared that she “just wanted to be a doula, not a business owner.”

Power dynamics and provider interactions were other identified challenges. Building relationships among providers can take many years, as many doctors and nurses see doulas as being potentially oppositional to them; I have experienced this first-hand working as a doula in Klamath County, and this challenge was brought up in every interview I conducted. Positive relationships often begin with some type of assurance that doulas will not question or oppose doctor’s decisions or higher status in the birth space, keeping the power dynamic equal in favor of being allowed to share space in hospitals. Similarly, others noted that confusion about a doula’s role, such as confusion with the role of a midwife, was something people struggled with and may contribute to how they are perceived by the general public. A doula also brought up the concept of nurses and doctors seeing doulas as either not being needed or as overlapping or encroaching on their roles (i.e., being a labor coach or support person).⁴¹

“I think at the end of the day, the nurses resent me sometimes because I’m getting to do what they thought they were signing on to do.”

Perception of value was another challenge that emerged from the discussions as a major challenge: from the public, amongst other birthworkers, to families, and from systems and healthcare professionals. How much money to charge, trying to get insurance reimbursements and competition from volunteer doulas in the area contributed to other challenges. One doula remarked that “we’re still valuable but when it comes to that compensation, that’s where we don’t necessarily agree.” Higher value is assigned to THWs and doulas certified through the larger doula organizations, as some of the doulas observed.

Another challenge for doulas was the long commutes and dangerous road conditions seen in these regions, especially during winter months, and the time and cost associated with them. This makes rural birth work complicated in different ways than an urban area, where being able to drive and have a vehicle is necessary than where people and doulas are more closely located to one another, with a denser population of potential doula clients and with public transportation more widely available. More research is recommended, as the voices of rural doulas are not often heard, and much can be learned from their stories.

41 Kira Neel et al., “Hospital-Based Maternity Care Practitioners’ Perceptions of Doulas,” *Birth* 46, no. 2 (2019): 357-8.

Skills

When asked what the most important skills for a doula to have were, most replied: “to listen.” This sentiment echoes the title of this project and was reported most often by collaborators. Listening skills, a calming presence and good use of intuition and presence were noted as being extremely important, especially when providers don’t usually get to spend as much time with clients as doulas. As one doula explained, using platitudes was not effective with meeting with clients before and after birth:

| *“I don’t ask ‘how are you?’ I ask how is your mind? How is your heart?”*

Presence was mentioned more than once as being the most important skill for a doula to have, showing that the continuous presence of someone staying with a birthing person during labor was linked to more positive birth experiences. Staying present can be challenging when labor is lengthy, as well as attempting to balance personal lives and emotions while also attending to the needs of clients. As one doula stated bluntly, when entering a client’s birth space:

| *“You have to be good at leaving your own shit at the door.”*

Being trauma-informed was identified as being one of the most important skills by the doulas interviewed, which is not at all surprising, considering many doulas have experienced trauma themselves as well as secondary trauma from attending births (I am included in this group).

Flexibility was another important skill mentioned, as plans and situations can often shift during pregnancy and labor. Using technology like video conferencing platforms such as FaceTime or even telephones when barred from access due to COVID-19 hospital restrictions and providing more childbirth education were creative forms of continuity of care in the face of the unpredictable. Others mentioned the importance of asking questions and leaning on other birthworkers for advice and support. Not only as backup, but as peers to debrief experiences with and get advice and encouragement from. Through all the challenges mentioned, most doulas still persevere in their dedication to their work. One doula eloquently stated:

| *“I think we’re adaptable, we’ll find a way.”*

Hopes for the Future

While all the doulas I interviewed for this study engaged in other work besides birthwork to support themselves and their families financially, most expressed their desire to do doula work full-time, but had not yet realized that goal. One doula exclaimed passionately, “THIS is what I want to do for the rest of my life!” When discussing future goals and what was needed to meet them, having a reliable backup doula to practice alongside was commonly mentioned. Backups and peers in birthwork were identified as important to a sustainable

practice and to avoid burnout. In this same vein, there was an identified need for an expanded, quality workforce in the region among collaborators. A physical space for them to practice, as well as engage with the community was a frequent goal expressed by the doulas interviewed, allowing them to be more visible in their communities and give a certain level of legitimacy to their practice by having a professional space in which to work and meet clients. The Indigenous doula interviewed expressed a strong desire for a birth center for their community and a return to traditional birth practices and remarked that there were no birthworkers in their area supporting tribal members. Plans to have culturally congruent midwives and doulas, bring back ceremonies, utilize sacred plants and provide cultural reconnection through making cradleboards available to new families were some of the goals they envisioned. Indigenous birthworkers also discussed the dire need for other social services and forms of support (most notably housing, mental health, and addiction/recovery services) in Klamath County. There was also a connection made between the health of the people and health of the environment: the Klamath Tribe's ancestral homelands have long experienced major drought and ecologic disruption after a century of agricultural development of the wetlands; now, the sacred c'waam and koptu species of fish are near extinction in Klamath Lake.

The theme of feeling that being a doula was an important role was significantly prominent among collaborators. Being a doula was seen as a very special role to have in the community, and one doula described her love for her work in this way:

“Being a doula is literally my favorite thing I’ve ever done besides being a wife to my husband and a mother to my children.”

Demonstrating how seriously they approach their role, many birthworkers interviewed spoke to the feeling of being present at someone's birth as being a true “honor.”

The fact that the career of a doula did not require a degree makes it accessible to many, according to multiple respondents; however, this is a contributing factor to doctors and nurses not treating doulas with respect in hospitals.⁴² Referring to job security as a theme, many doulas mentioned that people will keep having babies, making doulas continuously needed. Only one doula, when prompted with the question of whether they thought the profession was a good career choice for others in their community, said no. Limited perceived value and awareness, as well as an “oversaturation” of newly trained doulas were the problems they cited that would need to be solved before they would say it was a good career choice. Community was mentioned in all discussions, reinforcing the commitment to the doulas interviewed to the places they live. Every doula interviewed had children of their own to care for, many

42 Neel et al., “Hospital,” 359–60.

multitasked wearing “different hats” in their lives and work and even other activities while conducting the interviews. Commitment to relationships and their traditional role in community is the common thread tying all the stories of the doulas in Southern Oregon, and I, together.

Applying the Research

Since the original study was written in 2022, this research was utilized to begin to tackle the identified needs and challenges of doulas in the region. It informed the creation of curriculum and the development of a community-based 120-hour Oregon Health Authority approved training for aspiring doulas that includes mentorship and all components needed for THW designation, filling a need for a training in this region (and trauma-informed, self-care centered education). As of June 2023, Doula Training Center has trained and certified two dozen doulas in Southern Oregon and its surrounding rural regions and is currently in the process of being translated into Spanish. Other community organizations have collaborated to provide scholarships to bicultural/bilingual, LGBTQIA, and other doulas with shared lived experience to priority groups for training and to support them in obtaining births to attend to register as a THW. In 2022, a Family Community Center was opened in Medford, a physical space used for doula’s client meetings, doula trainings to be held, and for facilitating community events and spurring more collaboration with other organizations that support families as well as OBs, nurses, midwives, and other providers. This research, alongside other research articles, was sent to Oregon Health Authority in support of the OHP reimbursement rate being raised for doulas (from \$350 to \$1,500); this is a pivotal step in paving the way for doula work to support a living wage for those previously not been able to enter the profession. As I reflect on the nascent doula workforce in the region and the progress that has been made, I feel hopeful, grateful and I will continue talking to doulas.

Conclusion

I often reflect on the wealth of knowledge that was shared with me and the value of it, not only for readers, but for me as well, as it has deepened my understanding of birthwork and of myself. Interviews reflected the common motivations of people coming to birthwork from a place of previous birth trauma, especially among Indigenous doulas. This demands more support for birthworkers in processing their own birth trauma or secondary trauma. This is also a reflection of the high number of maternal deaths seen in the United States and shows that more support is greatly needed for both those giving birth and for the birthworkers that support them. In turn, doulas have the potential to help others to understand why these rates could be so high through their own motivations and experiences doing this work. Because the doulas in Southern Oregon I interviewed talked about their own experiences giving birth, it reiterates just how pivotal the experience of giving birth is and how it influences the rest of the person’s life. It is a crucial and challenging rite of passage to undergo, and one vividly remembers who was there supporting

them and how they felt. Having support in this process from others was a historic human need and continues into the present day and to future generations.

Even though I did not directly ask any of the doulas I interviewed about their own births, each shared their stories with me. This is powerful as it highlights just how important this event is in a person's life and how it shapes and influences self-esteem and perception in many ways. People vividly remember who was with them and how they felt many years later. Because interviewees mentioned imposter syndrome and feeling unprepared for the work illustrates the lack of full acceptance of doulas by other healthcare professionals and calls for a more comprehensive training curriculum for birthworkers to professionalize it further through standards. Doula trainings, from the interviews, still come from a colonized and Euro-centric lens and alienate those from other cultural backgrounds seeking to do this work. Furthermore, doula training programs are not "one-size-fits-all," as every region has specific needs, so building community-based trainings that emphasize learning history of people and land of that area is a way to make them more effective. Importantly, experiential learning in the form of shadowing more experienced birthworkers is indicated as being conducive here. Based on the information I gleaned from interviews, doulas trainings should also expand their curriculum on business information and the administrative needs of doula work should be considered in reimbursement models of billing hubs. For those seeking to serve birthing people on OHP as THW doulas, trainings should provide more support on how to effectively work with vulnerable population such as houseless, BIPOC, and LGBTQIA birthing people. Additionally, through previous research and these interviews, there is a highlighted issue of the perception of doulas in healthcare systems. More education is needed to raise awareness and be informed about doulas in their areas and what their role is. Doulas seek acceptance into the hospitals as professionals valuable to the birth process, not seen as enemies or mere visitors within the birth space.

In striving to better understand the motivations and unique experiences of birthworkers in Southern Oregon, it exposed the connection to other maternal care desert areas around the world. Unlike in higher populated areas, doulas in rural communities must grapple with serving a population that is more spread out, more impoverished, and often lack the awareness of doula services, though they could greatly benefit from them. This project also gave the valuable opportunity to hear from Indigenous and Latina birthworkers, who are often underrepresented in literature and public awareness, though they could provide a valuable, unique perspective that differs greatly from the Euro-centric narratives. Since I was able to talk to doulas in the Southern region of the state for the scope of this project, but not the Eastern regions, there is a need for more research to be conducted with doulas in Eastern Oregon to better understand their experiences. Longitudinal research by listening to doulas and nurturing participatory action community research is encouraged to support birthworkers and the families they serve, everywhere.

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RESEARCH ARTICLES

Social Comparison in the Natural Hair Care Community

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Social media is becoming an increasingly important aspect of individual, cultural, and social identity, especially for minoritized women in social media beauty-related communities. However, social media researchers find these platforms create a problematic paradox as it grows, particularly among young adults and urban communities. At its best, it can be a place where individuals connect with others, learn, express unique identities, and develop a sense of community (Deavours et al., 2022). Yet, the dark side of the digital world suggests extreme negative impacts on users' self-confidence, body image, anxiety, depression, and more (Henriques & Patnaik, 2020). This paradox can be even more challenging for members of minoritized communities (Hoffman, 2018), who use social media to build collective identity but suffer from social comparison to Eurocentric cultures. Yet, social media on the Black community and identity is understudied, particularly in self-image and beauty. This research explores how and why Black women utilize social media within the natural hair community and social comparison and self-identity effects. Utilizing in-depth interviews with 20 Black females in the natural hair care community, the findings provide an extension to current social media marketing uses and gratification models. Additionally, it provides insight into social comparison effects of beauty influencers on standards of Black beauty and identity.

Introduction

Social media researchers believe social platforms create a problematic paradox. At its best, social media is a place where individuals can connect with others, learn, express unique identities, and create a community (Deavours et al., 2022). Yet, the dark side of the digital world suggests extreme negative impacts on users' self-confidence, body image, anxiety, depression, and more (Henriques & Patnaik, 2020). This paradox can be even more challenging for members of minoritized communities (Hoffman, 2018) who often use social media to help with collective identity but suffer from social comparison to Eurocentric cultures. Yet, social media's effects on the Black community and identity are understudied, particularly self-image and beauty. This research fills the gap to explore how and why Black women utilize social media within the natural hair community, their perceptions of influencers and content, and their experienced social comparison and self-identity effects.

Social media and the beauty community

Social media is a powerful force in cultural standards of beauty. Social media use affects beauty trends, body image, and self-esteem (Henriques & Patnaik, 2020). Studies show that social media use negatively affects individuals, pushing users to engage in unhealthy behaviors to meet unrealistic beauty standards; regular social media use has been linked to higher susceptibility to depression, anxiety, eating disorders, and more (e.g., Bissell & Zhou, 2004).

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While this has been found in all identity groups (male/female, all races, etc.), these adverse effects are particularly significant for adolescents, women, and sexual and racial minorities (Escobar-Viera et al., 2020; Hoffman, 2018).

The beauty industry has been at the forefront of the digital era, shaping and influencing social media platforms from its advent. Changes in consumer buying practices led many businesses to “shift their focus from products to people and from information delivery to information exchange” (Shen & Bissell, 2013, p. 629). Many brands utilize celebrities and influencers to create this people-focused approach. Influencers make content to get more followers and social/cultural power and shape beauty standards (Schouten et al., 2020). These findings underscore the need to understand better how beauty communities use influencer content.

Effects of social media on Black communities

While most research on social media’s effects on identity and beauty ideology has been done with general populations, there is a growing need to understand these effects for BIPOC (Black, Indigenous, People of Color) communities, particularly Black users. 77% of Black U.S. citizens regularly used social media, higher than any other race in America (Pew Research Center, 2021). Yet, despite having many Black social media users, the nuances of their experiences, perceptions, and reasons for using social media are less known, something this research explores.

Most studies show Black social media users are more likely to experience adverse psychological effects from social media (Hoffman, 2018). Many minoritized community members report negative emotional contagion, unfavorable comparison with others, envy, increased need for profile management, depression, and body image issues (Escobar-Viera et al., 2020). Studies show Black women struggle with social and racial identity negotiations during social media and vlog use and have adverse mental and physical health effects (Stanton et al., 2017).

Yet, social media can also be a place for social and cultural growth for minorities. Anyone with internet access can contribute to the larger discourse. Black women no longer have to rely on traditional forms of media to seek representation (Jackson, 2017). Research shows social media has been necessary for individuals to take control of their own narratives and challenge deeply set historical notions of Black female beauty, including hashtag activism through #BlackGirlMagic, #BlackGirlsRock, and #CarefreeBlackGirl (McArthur, 2016). Additionally, research shows social media beauty campaigns are becoming increasingly diverse (Hoffman, 2018), although there is room for growth.

History of the natural movement

The historical implications of the natural hair movement impact women’s desire to adopt or stay away from natural hair styles (Bellinger, 2007). Until the mid-1960s, African Americans wore their hair straightened according to the European aesthetic (Drumond, 2020). A “real” Black person adored a “natural

hairstyle, while those who straightened their hair were deemed fake” during the Civil Rights Movement, a key period in revolutionizing and empowering Black women in beauty (Thompson, 2009, p. 835). When the natural hair movement began in the 1960s, many women stopped wearing their hair straight and started wearing it curly (Ellington, 2014b). Seeing curly hair became more common than straightened or flat iron hair. Natural hair can only be changed using extreme heat or chemical relaxers, often damaging the hair and scalp. Historically, natural hair has remained a longstanding social and cultural indicator, and, in many ways, that has not changed; today, Black women, especially those in North America, refer to themselves as natural if their hair has not been altered by any means (Ellington, 2014b).

These historical implications have lasting effects on social beauty standards. Given that most American standards of beauty remain focused on Eurocentric paradigms that promote traditionally white hairstyles, like straight and wavy textures, many Black women have internalized identity struggles (Robinson-Moore, 2008). Due to these Eurocentric beauty standards, darker-skinned women, particularly those with shorter and natural hairstyles, often report higher isolation, lower self-esteem, and limited social and employment opportunities (Robinson-Moore, 2008). This has historically led to many Black women using straighteners or texturizers to conform to these Eurocentric standards. Yet, Black women are championing the use of more Afrocentric beauty standards to strengthen cultural identities (C. L. Robinson, 2011). These Afrocentric beauty standards promote natural curly or kinky hair as “good hair,” changing the historical narrative to promote more inclusive social beauty standards.

The natural hair care journey is defined as women wearing their hair natural, meaning without chemical straighteners, relaxers, or texturizers, and the process of keeping it healthy. While there is no “one size fits all” standard of natural hair, it usually ranges from wavy to kinky-curly, and traditionally, Black hair tends to be drier, fragile, and difficult to over-condition. Experts suggest that natural texture requires delicate handling, using frequent conditioning, moisturizing, and little heat to protect hair health (Gathers & Mahan, 2014).

It is also important to note that Black women have different hair types, making products and advice for natural hair difficult to provide and receive, given that textures react differently. The Andre Walker Hair Typing system often defines hair types, although more natural hair definitions have been added since the book’s original release to be more inclusive (Day & Baba, 2018). Numbers refer to the hair’s curl (1-straight, 2-wavy, 3-curly, and 4-kinky), and letters refer to the texture, which varies by number. Most natural hair falls into the type 3 and 4 categories with the following definitions:

Some women also have multiple types of curl at once and define their hair type with a mix or range of types (like 4a-4c). While many women feel their texture needs to be clearly defined in the hair chart, this method is still widely used by stylists and influencers to describe textures (Day & Baba, 2018).

Table 1. Typing systems for Type 3 and 4 hair

	A	B	C
Type 3 <i>curls that range from loose to tight; sheen, easy to straighten, prone to frizz; may appear straight when wet but goes back to curl state; more moisture it absorbs, the curlier it will be</i>	shiny, combination of textures, full and thick with definite "S" patterned curl	medium tight curls with a combination of textures	tight corkscrews, kinky or tightly curled, strands of hair densely packed together
Type 4 <i>Kinky or tightly curled; wiry, tightly coiled, fragile; known also as "Afro-textured hair"; naturally dry and spongy; ranges from fine to coarse; highest shrinkage rate; more prone to breakage</i>	S-shaped coils that have size of a crotchet needle, hair tightly coiled, more defined pattern	kinky, fragile, tightly curled, less defined curly pattern, Z-shaped pattern	fragile, more tightly coiled, no definite curl pattern

Women in the natural hair journey often wear their natural hair in challenging styles, mimicking straightened looks without chemicals, such as twists, braids, cornrows, Afro or TWA, and Bantu knots. Pressed hair is considered natural since the texture often returns to its unaltered state after washing. Additionally, many Black women wear natural hair after damaging it through straightening, relaxing, or texturizing, complicating the natural hair journey. Keeping natural hair healthy and styled can be challenging, which is why many Black women turn to social media and the beauty industry for help (Gathers & Mahan, 2014).

The Black haircare market is a large part of the beauty industry, estimated at over 2.9 billion dollars, with a growth rate of 4.1% (Market.us, 2023). Recent reports suggest that African American women spend about \$7.5 billion annually on beauty products (Shaw-Wakeman, 2023). Many influencers and brands have begun posting personalized content for the natural hair community as a lucrative beauty culture. Prominent online influencers seek to become virtual friends or mentors in their followers' natural hair care journey (Jackson, 2017). These influencers are most found on YouTube, Instagram, Facebook, and TikTok (Ellington, 2014a). This study defines social media with these four platforms as visual and most often used by natural hair care influencers.

Social networking sites have become a support system for 20% to 30% of African American women wearing natural hair (Ellington, 2014a; Thompson, 2009). Studies find that 45% of all African American adults prefer ethnic media over mainstream beauty influencers or content channels (Ellington, 2014a), seeking someone who looks like them and understands their unique cultural experience and identity. Factors of identification with an influencer do not stop at fundamental racial or ethnic similarity, though; it also extends to skin tone, hair texture, and hair type. Yet, little is known about the perceptions of this content.

To explore how some Black women use social media in their natural hair care journey, this study will utilize the uses and gratification theory (U&G). This theory explores (1) the social and psychological origins of (2) needs, which generate... (7) other consequences, perhaps mostly unintended ones" (Katz et al., 1974, p. 20). Modern interpretations of U&G suggest social and psychological factors guide an individual's desire to use certain media, shaping

the expectations of that media encounter (A. M. Rubin, 2009). Once media is used, it fulfills certain gratifications or needs. New media types have been categorized by Sundar and Limperos (2013); by these definitions, typified gratifications of YouTube include social interaction, escape, interpersonal utility, co-viewing, convenient information-seeking, and convenient entertainment. Typified gratifications for social networks are social connection, running, creating content, entertainment, gathering and sharing information, and sharing identity and photographs.

Social media researchers have also explored users' gratifications in social media marketing strategies. Chung and Austria (2010) created a U&G model, finding when social media marketing content gratified information and interaction needs those messages were more likely to increase online shopping value. Since many natural hair care communities push marketing messages and the viability of the multi-billion-dollar industry to utilize social media marketing in the future, this study explores whether these gratifications are found in the narratives of the natural hair community. However, research on urban and BIPOC communities' uses and gratifications, particularly for new media and visual and social channels, is understudied. Utilizing previous literature on uses and gratification, this study will explore the following research questions:

- **RQ1:** How do Black women in the natural hair care community utilize social media?
- **RQ2:** Why do Black women report using social media during their natural hair care journey?

Social comparison theory of natural hair community users and social media influencers

Additionally, this study explores the paradoxical psychosociological impacts of minorities using social media, both positive and negative. One potential explanation for these paradoxical findings may be understood through social comparison theory. Social comparison refers to cognitive judgments people make about their attributes compared to others (Festinger, 1954). Individuals continually analyze their ideologies, behaviors, and social and individual worth based on these social comparisons.

Comparison will result in either assimilation (when the evaluation is made, the individual is like the other) or contrast (when an individual decides their characteristics do not match the other) (Festinger, 1954). Comparisons are either upward (when the individual considers themselves equal or better than the other) or downward (when the individual considers themselves worse than the individual.) When the comparison is upward, positive effects, the continuance of the approved behavior, and self-improvement motivations occur; when the comparison is downward, adverse effects, avoidance, and desire to change oneself occur (Festinger, 1954).

Previous research suggests that individual and cultural characteristics influence how individuals will participate in self-evaluation through social comparison (Kruglanski & Mayseless, 1990). Additionally, media often affect social comparisons, emphasizing certain dominant beauty ideals and encouraging comparisons to in and out groups (Bissell & Zhou, 2004). When women cannot see themselves represented in the beauty community, it can affect their own self-evaluation as beautiful and worthy (Bissell & Zhou, 2004). Black females' identity is strongly influenced by social comparison, not only to themselves but by perceptions of others, mainly other members of their in-group race (Mbilishaka et al., 2020). Therefore, it is essential to understand how Black women identify natural hair care influencers who are culturally similar but perhaps also different regarding skin color, hair type, etc. Based on this previous literature, the researchers ask:

- **RQ3:** What kinds of comparisons to social media influencers are Black women experiencing during the natural hair care journey?
- **RQ4:** What comparison effects are reported by Black women's identities during the natural hair care journey?

Methods

For this project, semi-structured in-depth interviews were utilized with natural hair care community members to understand better how Black women interact with and compare themselves to natural hair care influencers on social media. In this study, interviews allow the sense makers, natural Black women, to narratively explain their reasons for utilizing social media, their outcomes, and the effects of comparisons to natural hair care influencers on social media.

Sample

After receiving IRB approval, participants were recruited for the study. To be interviewed, participants had to be over 18 years, female, Black or mixed race, with natural hair now or in the past five years, and a user of social media. A social media post was shared on Instagram to recruit participants. The McNair Scholars Program at the host university also shared information about the study. A purposive snowball sampling method (R. S. Robinson, 2014; H. J. Rubin & Rubin, 1995) used these recruited contacts first, and those participants identified others who met the inclusion category requirements. Twenty participants were recruited; all participants were between 19 and 28. All participants identified as Black and lived in various regions of the United States. Participants' diversity of hair types and skin tones was purposely sought to capture potential variations in experiences. Demographics can be found in [Table 2](#). Interviewees were assigned a pseudonym to protect anonymity.

Data collection

Semi-structured and in-depth interviews focused on individuals with similar identities and shared experiences (Tracy, 2013). Semi-structured interviews, consisting of structured interview questions, allowed the researcher to probe beyond the initial stage of questions while engaging in understanding and

Table 2. Participant demographics

Pseudonym	Race	Age Range	Hair type
Alayna	Black	21-23	4b-4c
Bea	Black	21-23	4a-4c
Caylee	Black	18-20	4b-4c
Diana	Black	21-23	4b
Egypt	Black	18-20	4a-4b
Feyisa	Black	24-26	4b-4c
Gamora	Black	21-23	4b
Harper	Black/Caucasian	21-23	3c-4a
Indie	Black	18-20	4a-4b
Jaylen	Black	21-23	4b
Kiana	Black	26-28	4b
Lanae	Black	21-23	4a-4b
Miley	Black	18-20	4a-4b
Nakia	Black	21-23	4c
Ozma	Black	21-23	4b
Philicia	Black	21-23	3c-4a
Raelynn	Black	18-20	4a-4b
Sedona	Black	18-20	4c
Tonya	Black/Hispanic	18-20	4c
Veronica	Black	21-23	4b-4c

allowing elaboration through narratives (Lindlof & Taylor, 2017). All interviews were conducted by phone or through Zoom/Skype and were 30-90 minutes.

The interview protocol guide (Appendix A) walked participants through their natural hair care journey historically and currently, their use of social media during their natural hair care journey, the types of influencers seen, their satisfaction with that content, what they felt they gained from the experiences, any negative consequences or feelings resulting in use, comparisons to influencers, self-reported psychological and social outcomes of the influencer comparisons, and overall sense of natural hair content on social media.

Data Analysis

Participant responses were thematically coded for uses and gratification categories and social comparison. Researchers followed Lindlof and Taylor's (2017) strategy to clean and code the data, grouping codes into broad categories of similar ideas. After initial analysis, themes were evaluated to identify the most salient.

Data and analysis quality were assessed using the three tests of information sufficiency: "taken-for-grantedness" (as achieving a high degree of emic competency), theoretical saturation, and heightened confidence (Lindlof & Taylor, 2017, p. 329; Tracy, 2013). Saturation was reached when participant narratives began to repeat similar theoretical themes and sufficient diversity of

hair types and experiences was found (Lindlof & Taylor, 2017). Additionally, the researchers conducted member checks with six participants who verified accurate representation of their experiences.

Findings

Overall, the findings suggest social media mostly positively influences Black women's perceptions of their hair care journey. Our participants say their journeys would be nonexistent or vastly different without natural hair care influencers. Natural hair beauties described social media as a "go-to place" for their hair.

Black women's social media usage

In examining **RQ1**, how Black women in the natural hair community utilize social media, the researchers found that 19 participants regularly use social media during their natural hair care journey. 95% cited it as an essential tool for self-discovery and maintaining their natural hair. The participants said they do not let a day pass by without using social media to assist them in their beauty journey. It is a "must-have" for finding inspiration for hairstyles, new products, and tutorial videos. All 20 participants used social media as a critical part of their natural hair journey and regularly discussed its importance to their beauty regime and identity.

Participants said they use YouTube and Instagram, followed by Twitter and TikTok. Pinterest was rarely mentioned, while Facebook was not mentioned at all. Participants said when they first started wearing their hair naturally, they followed dozens of accounts, trying to find influencers they connected with regarding information, inspiration, or hair type. However, as they became more experienced in styling their hair, participants relied less on general social media searches and more seriously followed 1-2 influencers they felt most connected to. This suggests Black women utilize social media regularly throughout all stages of their natural hair community, although the uses differ during the journey.

Importance of social media during the natural hair journey

In examining **RQ2**, which asks why Black women report using social media during their natural hair care journey, the researchers found many gratifications for social media in this beauty process, including information-seeking, inspiration, interaction, and identity confirmation.

The most prominent use of social media was information-seeking. All participants used social media to seek information on hair types, techniques, and new products. For example, when asked how social media helps with the natural hair journey, Ozma said, "I think I wouldn't know anything. It's been beneficial for me to find my footing or how I want to style my hair differently". She says without getting fast information from social media, she likely would have given up the natural hair process from frustration. Participants mentioned using other sources of information for natural hair care, like hairstylists, friends, and family but felt social media provided more variety and techniques.

Inspiration was another prominent gratification of social media use in the natural hair community. Participants said seeing new ideas, styles, and products inspires them to try new things, fully embracing the variety of natural hair types. Raelynn says, “I’ll be stuck on which hairstyle to get or do. Social media gives me many ideas of ways you could do a different hairstyle.” Since social media, in this case, is used to help find your identity, this is not a use of gratification recognized by Chung and Austria (2010), but one meaningful to this community.

Interaction and community generation were other strong themes. Participants often spoke about feeling unsure about what to do or whom to talk to until they found social media. Caylee says social media helped her find people who finally understood her. “Growing up in the school I was in were many white kids. Still, to this day, I feel like some are not used to people with curly hair.” It was not until she found others promoting curly hair online that she felt confident enough to try it. The interaction and support of others in the community far outweighed any negative interactions they had on social media about their hair.

Identity confirmation was another theme for participants. Many women said finding other people similarly styling their hair helped them understand and embrace their identity. They were also encouraged by the popularity and influence of Black women on these channels, who empowered them to feel beautiful in their natural hair journey. Chung and Austria (2010) do not recognize identity confirmation, but this research suggests it may be necessary for minorities.

Comparisons between social media influencers and Black women

Yet, these uses and gratifications of social media must also be examined through the lens of social media’s impact on identity and beauty standards in this community, mainly since many other studies report harassments and hate for historically underrepresented groups online. Thus, the researchers asked **RQ3** what kinds of comparisons to social media influencers Black women experience during the natural hair journey. During their hair journey, participants said they experienced a sense of trial and error, having positive and negative comparisons along the way. Based on these encounters, they changed their behaviors based on different influences, both digitally and from real-world encounters.

Participants said they ultimately felt favorable comparisons with natural hair influencers, allowing them to push past hesitations about wearing their hair naturally. Caylee says, “I had in my mind that people judged me at first, and others were picking at my hair or fascinated by something exotic and new in the world. My grandmother and my nanas weren’t very up for it at first.” Caylee said her mom and went on to learn how to do their hair naturally together, utilizing tutorials and posts from social media to grow in their understanding and abilities. Similar stories were told by participants. Society, family members, and peers discouraged natural styles, yet these participants said favorable

comparisons to pro-natural hair social media communities allowed a tipping point in their desire to be natural beauties, which in turn also helped them gain support from familial supports.

Many participants say they initially felt unfavorable comparisons with influencers with different hair types, making them feel like outsiders to the beauty world. This caused doubt, confusion, and frustration in their identity progression because their hair did not look like someone else's. Ozma says, "I feel like many times when people promote natural hair, even ones like if you see hair companies, it's always with looser textures, and I'm just like, 'I don't have that texture.' It makes you feel undesirable." In Ozma's case, finding an influencer on social media with a hair type to hers confirmed her identity as natural hair beauty. This suggests there is a potential for social media to reify negative feelings about Black beauty when certain hair types and textures are not represented in influencers and natural hair communities.

Some participants noted some influencers gave terrible advice, not considering all hair types and routines, which negatively affected their perceptions of the digital natural hair community. Alayna says she sometimes disagrees with things she sees online, but believes it is great to have all types of information since not everyone needs the same advice. "Everybody's hair is not the same. We're all Black, in the same categories sometimes, but we don't have the same type of routine we use." This is a nuanced social media community, and influencers need to be aware of this when creating diverse content for Black women of all hair types.

Additionally, participants interviewed had encountered at least one negative experience during their digital hair journey, often leading to damaging results for their hair. For example, Jaylen says, "When I used those heavy creams and butter and Cantu, it weighed my hair down and made it fall out a little bit. I had a moment where I was losing my hair. I think it was because I was dying my hair in so many colors and following natural girls who dyed their hair with box dye [...] I had to do a mini chop and start over." While she says that was discouraging, Jaylen realized she was following the wrong type of accounts. She says her journey was much better once she found the correct type of advice.

Once a member of the natural hair community found their "in-group," influencers, and community groups they identified with, the impact on their hair care was substantial. 68% of the participants noted they changed their hair whenever new posts from their favorite influencer were posted; others said they had spent a lot of money trying products recommended by social media. Many said seeing Black women they identified with on social media helped them feel more beautiful. They would do anything to strengthen that identity by mimicking their styles, product use, hair maintenance, and adopting the tips and tricks provided.

This was especially true for participants at the beginning of their hair journeys. Nakia says she was dedicated to influencers' tips when she started. "I would take their hair regimen. So, if they said this shampoo was perfect, I'd buy it. If they said this shampoo wasn't great, and I had it in my stuff, I would

throw it away.” Yet, as she got older, began to understand her preferences and hair type, and felt more confident in her abilities, Nakia said, “I kind of just had to take my time and decide which products I need because they last a very long time.” This suggests audiences’ connections with influencers can meaningfully affect their behaviors and purchasing decisions, especially when the user is less sure about their identity. While influencers still helped participants further into their journeys, the impact on their behaviors and purchasing decisions became less potent.

Comparison effects on Black women’s identity

When determining how comparisons affect a Black woman’s identity during her natural hair journey, RQ4 asked whether upward or downward comparisons were the most common. Seventeen participants said they first turned to social media during their natural hair care journey because they were feeling downward comparisons and not finding support from their friends and family groups. All of the women sought self-improvement and motivation. After some initial concern over not finding influencers with similar hair types or skin tones, all of our participants said they felt they had grown more confident in natural hair being beautiful, with positive effects on their overall sense of worth, after social media use.

Caylee says she had a hard time initially feeling beautiful, often feeling like her hair was not growing how she wanted it to conform to the influencers’ style. Yet, after continuing to watch motivational posts, she feels much more confident in her journey. “It’s about self-worth because your hair is a part of you. When you start, this part of you makes you who you are. So, take care of it so you’ll care for your body, mind, and soul.”

Yet, some participants noted having influencers as a resource of information did not stop others from being negative about their posts about their hair. Tonya says, “Stuff like that is toxic. But the overall impact, I think, is pretty good because people are riding the Black Girl train for some reason.” While social media sometimes negatively impacts natural care community members, our participants noted an ability to recognize the toxicity, ignore it, and focus on the positive effects. All participants said this has become easier since movements like Black Lives Matter and Black Girl Magic have reached mainstream audiences, creating a safer environment to celebrate their identity and beauty.

Discussion and Conclusion

This study explores how social media impacts the natural hair community. Utilizing in-depth interviews with Black females who have natural hair, these findings provide insight into how these women use social media throughout their hair journey and its effects on beauty and identity. These findings contribute to prior research by detailing specific uses and gratifications of users and their social comparison experiences.

While the inclusion requirements of our study did not require participants to use social media during their natural hair care journey, every participant used social media daily in their hair care routine, primarily YouTube, Instagram, and TikTok. Participants said they first followed many different accounts and then followed a handful of influencers for advice, inspiration, and product recommendations through trial and error and identity comparisons. While participants mentioned they desired to use social media for information-seeking, additional gratifications included finding inspiration and ideas for style or product changes and confirming their natural hair care identity.

These findings align with Chung and Austria's (2010) findings on social media marketing's ability to draw upon informational and interaction gratifications. Like Chung and Austria's work, entertainment was not a primary theme, suggesting the community relies on social media more for marketing and brand decisions than entertainment purposes. These findings build on their model of social media marketing gratifications, adding two gratifications: inspiration and identity confirmation. Inspiration allows users to take the information given and bring it to life in a new or different way. Identity confirmation enables users to gain confidence, self-worth, or value by seeing themselves reflected in the communities and influencers promoted online. Many beauty influencers use these marketing tactics, and previous research shows inspirational and identity-building beauty gurus gain credibility and affect purchasing decisions of millennials (Hassan et al., 2021). While the natural hair care community is not always marketing-based, many natural hair care influencers participate in native marketing practices by promoting products and care processes through community and identity-driven messaging. This suggests viability for marketers in the natural hair community to utilize influencers this way. It also helps expand the current understanding of social media beauty uses and gratification models by adding new potential influence factors.

Participants were also aware of the comparisons they drew about themselves from the digital content in the natural hair community. About 95% (19 out of 20) of participants spoke positively about their encounters with social media, feeling it benefited their hair and overall identity. However, the other 5% felt growing divisions within the natural hair groups, promoting certain hair types or textures over others. 77% of participants thought it was challenging to find accounts about specific hair types, creating an initial feeling of isolation, inability to gain much information, or having negative experiences that damaged their hair. This suggests a greater need for influencers and communities of all hair types to be represented and promoted on social media. Industry professionals can work to understand these nuances in textures and hair types within the natural hair community to provide greater diversification of models, product types, and promotional messages.

Despite these negative encounters, all participants ultimately felt an upward comparison effect from utilizing social media during their natural hair care journey. They said they had found new strength in understanding their

identity as a Black woman, proud of the hair they were born with, and able to appreciate their natural beauty. While all noted their uniqueness and beauty process was always in progress, participants felt overall interactions with the natural hair community led to greater awareness, community, and value of natural hair among Black women.

While previous research has discovered the extraordinarily harmful and adverse effects of social media use on Black women (i.e., Hoffman, 2018), this study offers some hope that those in the natural hair community find information, inspiration, interaction, and identity confirmation through social media outlets reflecting their beauty. In addition, this research contributes to previous literature by extending the social media marketing uses and gratification model and providing insights into Black women's social comparison process during their natural hair care journey. Finally, while additional work can be done to ensure Black women of all hair types, textures, and skin tones are better represented in digital communities, the study suggests a potential for influencers and social media communities to become a powerful force in improving and empowering urban communities in cultural standards of beauty.



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Appendix A: Interview Protocol

Researcher does not have to ask every question; this is a guide for interviewers. Follow-up questions are expected.

Investigator will review informed consent with participant

- Do I have your verbal consent to participate in the study?
 - If yes, continue
 - If no, thank them and say their participation is no longer needed at this time
- Do I have your permission to record?
 - If yes, begin recording
 - If no, take thorough notes of the interview and tell the participant you will be taking handwritten notes of the conversation

Demographics

- What is your age?
- What is your race or ethnicity?
- What is your gender?
- What city are you from?
- What is your annual household income level? Range, not specific

Social media use

- How often do you use social media?
- What platforms do you use?
- How many hours a day on average would you say you use social media?
- How long have you been using social media?
- What do you mainly get from your use of social media? Why do you use social media?
- How often do you create content for social media?
- How often do you see ads on your platforms?
- What kinds of ads do you most often see on your platforms?
- How diverse would you say your friends or followers are racially?

Natural hair care

- Tell me about your hair care experience.
- Tell me about the process to care for your hair. What steps do you have to take?
 - Which method do you prefer: L.O.C., L.C.O., or OTHER?
 - If other, please specify
 - Which do you prefer and why:
 - Water based products or oil based products?
 - Butters or cremes?
 - Deep condition with heat or deep condition without heat?
 - For your scalp: hair oils or hair grease?
- What is your preference on using “all natural” (no harsh ingredients, chemicals, sulfates, or paraben) products?
 - If prefer all natural, ask why
 - If does not prefer all natural, ask why
- How often do you think it’s necessary to trim your ends?
- What is your favorite protective style?
- If you had to choose the most important part of your hair care routine, what would it be and why?
- How would you describe your look?
- How has your look changed throughout your life?
- Who or what have been the biggest influences on your hair care changes in your life?
- How have friends influenced you?
 - Family?
 - Advertisements?
 - Other forms of media (TV, magazines, etc)?
- Why is your hair important to you?
- Why is being natural important to you?

- What are the challenges you think you face in terms of being natural?
- How do you think other people's perceptions of you change, if at all, when you wear your hair natural?
- Do you think you'll ever not wear your hair in a natural style again? Why or why not?
- What advice would you give to someone who is starting out as a natural or transitioning?

Social media's impact

- What are some of the top accounts you follow or watch?
- Who are influencers you watch or follow about Black culture? Why do you follow them?
- If you are using social media to learn more about natural hair or ideas/techniques, where do you go? Who do you follow?
 - Why do you follow those people?
 - How did you find this account?
 - What do you feel you learn from them?
 - How did these accounts influence your hair care journey?
- How do you judge the person's knowledge about natural hair?
 - Has there ever been a time where you disagreed with an influencer about your hair? Explain.
 - Have you ever experienced a negative effect from someone's tips/techniques? Explain.
- Many influencers in the natural hair care movement say "You have to find what works for you." What are your thoughts about this advice in terms of your own natural hair journey?
- If you didn't have social media, how do you think your natural hair journey would have been different?
- How often do you see ads on social media about Black hair care?
- Have you ever found a product or a styling technique on social media that you then used?
 - If yes, what was it?
 - What made you want to try it?

- How did it work for you?
 - If no, why do you think social media hasn't had an effect on your hair care journey?
- How are your friends influenced in their hair journey by social media?
- Have you ever posted about your hair journey on social media?
 - If yes, what was the response? How did it make you feel?
 - If no, why not?
- Do you think social media has had a mostly positive or negative effect on Black hair culture?
- What changes, if any, have you seen in social media's support of the Black hair care movement?
- What changes, if any, have you seen in advertising on social media in support of the Black hair care movement?
- What changes on social media would you like to see in terms of Black hair care?
- What changes would you like to see on social media ads about Black hair care?

Overall, how do you feel about social media's impact on the natural hair movement?

Overall, how do you feel about having a natural hair style?

Anything that I didn't ask you about your haircare journey that you'd like to say?

Thank participant for time, end the recording, and answer any other questions they may have.

RESEARCH ARTICLES

Challenging Black Male Patriarchy: A Survey of 19th Century Feminism and Its Impact on Contemporary Gender Theory

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A common feminist understanding of patriarchy maintains that patriarchy is the rule all men have over all women (Curry, 2022, pp. 534-535). This ahistorical ideological definition of patriarchy holds that men, regardless of the historical and empirical nuance the classifications of race and class might cause, dominate women because of their maleness. This paper challenges this definition of patriarchy on account of its inapplicability to Black men and hence the idea of “Black male patriarchy.” This will be done by exploring the history behind ethnological theories on race and sex and the racial origins of feminism (first wave). This paper will also present contemporary data that measures the extent to which—or lack thereof—Black men are beneficiaries of patriarchy. The data consists of life expectancy, domestic violence victimization, and incarceration. Patriarchy is not a valid framework to understand the lives and positions of Black men in historically patriarchal societies like the United States. When examining the definition of patriarchy along with the history of discrimination and anti-Black misandry to which Black men have been subjected, it becomes clear that patriarchy is not an applicable construct. The contradictory complexity of being labeled an ungended, feminine, yet hyper-sexualized male, requires a nuanced analysis that current feminist frameworks simply do not have room for.

Introduction

Studies centering the Black male experience are few and far between. Even less common is the argument that despite being male, Black men do not benefit from the supposed advantages of patriarchy. However, this suggestion becomes increasingly compelling when one looks at tangible and measurable ways a man may benefit from patriarchy. Because of historical and contemporary social norms and practices, many males do experience advantages like higher wages, safety from sexual assault or intimate partner violence, and a higher standard of living in general. But this paradigm does not neatly fit the experiences of Black males—one of many understudied and simply unseen groups in and out of academia. The Black Male Studies (BMS) paradigm attempts to rectify this chasm by centering *all* Black men, assuming their humanity, and using empirical data to back the lived experiences of Black men collectively. The complexity of gender and its many iterations based on social norms ascribed to it and the binary sexual designations of “male” and “female” are recognized in this study. The terms male/men and female/women will be used to refer to biological sex with the understanding that “masculine” and “feminine” pertain to gender roles that are complex, fluid, and variable. This paper seeks both to interrogate the problematic ways in which Black men have been studied through this paradigm—and support the expansion and usage of BMS within academia to understand the lives of Black men inside (and eventually outside)

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the United States holistically and constructively throughout posterity. Because the patriarchal paradigm considered in this study is most commonly (mis)applied to heteronormative, cisgender Black males, the scope of this study is largely limited to that population. The implications for transgender, nonbinary, and queer Black men, as well as the ways that the BMS paradigm can more fully engage their lived experiences, merits further consideration outside this study.

Literature Review

When looking into previous research done in this sphere, studies centering Black men and their experiences in gendered oppression or “anti-Black misandry” (Curry, 2017b), one finds that the work is concentrated among a few scholars. This might be attributed to the fact that the act of centering Black men in studies is perceived as exclusionary or diminishing of other groups’ voices (Curry, 2017b). Regardless, the few existing empirical studies converge on the conclusion that Black men tend to be *one* of the main victims of patriarchy. A 2018 study (Johnson) investigated whether Black men truly experience privilege on account of their maleness; it was concluded that, when measuring what the researcher deemed appropriate and quantitative aspects of privilege—“leadership, domestic violence/rape, leading causes of death, income, and employment” (p. 21)—Black men, if anything, are one of the main victims of U.S. patriarchal society—let alone the beneficiaries. Even in the case where Black men were shown to be doing better than Black women—income—it was deemed so because “incarceration contribute[d] to growing joblessness, especially among low-skilled [B]lack men,” and that this “drove up reports of average wages of [B]lacks, inflating rates of [B]lack economic progress” (Pettit, 2012, p. 65).

In “Reconstituting the Object,” Curry argues that Black men are theorized by white intellectuals through anti-Black caricatures; Black manhood and masculinity are contemporarily studied and understood under the idea that Black men’s “response to white patriarchal norms” (p. 525) is through the emulation of the same subjugating white male patriarchy: mimetic theory. Curry also establishes Black Male Studies as a paradigm that argues that Black men, “like other racialized male groups throughout the Global South” (p. 526) are the primary targets of patriarchal violence.

In the same vein, another study by Curry (2017a) uses a historical approach to explain the racial origins of twentieth century concepts of gender and how that has impacted the parochial ways that Black men are contemporarily studied and theorized. The same study—through empirical and historical findings—shows how nineteenth and twentieth century European ethnological and white feminist narratives have greatly contributed to how we understand gender today and how that has erased the possibility of understanding Black men as an oppressed group—not despite—but rather *because* of their maleness.

Despite popular cultural concepts, most Black men are not prone to domestic violence, one of the manifestations of patriarchy. A 2008 study (West) investigates domestic violence rates with Black men as both victims and perpetrators and the “risk factors that make Black men vulnerable to dating violence” (p. 238). This study draws conclusions solely from the statistical findings, using “socioeconomic status, exposure to family violence during childhood, and exposure to community violence” (p. 238) to explain the high rates of intimate partner violence (IPV) among Black couples, rather than attributing it to the innate savagery and patriarchal nature of Black men—as prior studies are oft to do. West concludes that “the majority of Black men do not commit violent acts against their girlfriends and dates” (p. 246). She continues, “too often, African American men are portrayed within the mainstream society, and sometimes within the Black community, as irresponsible and prone to violence,” (p. 252) and argues that this contributes to the perpetuation of this stereotype. This is the result of Black male life being theorized by descendants of white ethnologists—as well as their non-white adherents—and those findings becoming dogma within the academy and mainstream society.

Similarly, gender roles among Black couples are not generally as clearly stratified as they are for white couples. A 1984 study (Franklin) exploring the causes and possible solutions between Black male and female conflict, argues that Black male/Black female conflict is caused by, among many things, the “sex role noncomplementarity” among Black males and females—meaning that *generally* Black males and females may not have the same gender roles as white couples do. Franklin argues that one of the reasons for this dissonance is that “Black men and Black women...have received contradictory messages during early socialization” (p. 144). On the one hand, Black women are told they need to take care of themselves, because no one else will, but on the other hand, they are also told that they need to find a good Black man who will take care of her. Franklin finds that these contradicting messages “when internalized...produce a Black woman who seems to reject aspects of the traditional sex role in America such as passivity, emotional and economic dependence, and female subordination, while accepting other[s]...” (p. 144). Black men also receive contradicting messages that emphasize being “dominant, aggressive, decisive, responsible, and, in some instances, violent in social encounters with others” while also being told to not be “too aggressive, too dominant, and so on, because the *man* will cut you down” (p. 146). These contradicting messages produce people who disrupt established gender roles that make it difficult and complicated to classify them under mainstream gender concepts.

Mainstream conceptualizations of masculine privilege also do not fit the realities of Black manhood. In the “Controlling Masculine Hierarchies” chapter of *Black Masculinity and Sexual Politics*, Lemelle argues that the societal position of Black men is an “appendage to real masculine labor” (p. 51). To reach this conclusion, Lemelle looks at the changing ways in which Black men have been possessions of the powerful status classes. Black men

were first possessed in a literal sense during slavery; this continued past the civil rights movement through “the system of buying and selling black athletes” (p. 51) as well as the way “the prison industrial complex organized black familial instability” (p. 51) and reintroduced servitude through the “convict lease system” (p. 51). Ways to control or “possess” Black people, and Black men in this case, were a perpetual phenomenon that existed well past literal ownership of Black people during slavery. This, argues Lemelle, routinely broke “the spirit of masculinity, and specifically patriarch masculinity” (p. 51) among Black men. In this section, Lemelle argues that “Black male gender requires a more sustained examination” than feminist and masculinist theories provide, especially when arguing that “[B]lack men oppress [B]lack women *just as* white men oppress white women” (p. 53). Lemelle argues that this idea becomes appealing when examining the negative implications that “binary gender categories of Eurocentric dominance” has on Black men and women (p. 53).

These studies converge on the conclusion that Black men simply cannot be understood to be patriarchal, especially when the main argument for this is that Black men function as emulations of white men simply because of their gender. If it is unacceptable to understand Black women as emulations of white women, it should be just as unacceptable for Black men. What seems to elude feminist theory is that this line of thinking reduces Black men to the phallus. The historical conditions as well as the empirical contemporary and sociological studies of Black men maintain that Black men continue to be *one* of the most targeted groups by patriarchy.

The ethnocentric ethnological influence of 20th century gender theory

Ethnology is generally defined as the study of different races and using that study to draw similarities and differences between groups. Ethnology in its founding, however, was specifically used to “scientifically” prove the innate inferiority of non-white/European bodies globally. Curry (2017a) argues that ethnology was a science used to “rationalize the supposed superiority of the white Anglo-Saxon race to all others” (p. 4). To support this, Curry cites John Haller (1971) who argues that ethnologists would not study their own society but would rather offer suggestions “in and out of [their] discipline” and “general[ize] about human behavior in its various aspects” (p. 710). This was what 19th century ethnologist Otis T. Mason (1882) was referring to when he claimed that ethnology was a science in which “you are all both the investigator and the investigated—the judge, the jury,” (p. 20) meaning that there lacked an actual scientific approach to studying races. For the practical purpose of studying races, “the Caucasian was the lone man in evolution” while “the lower races broke into the modern world as mere ‘survivals’ from the past, mentally and physiologically unable to shoulder the burdens of complex civilization” (Haller, 1971, p. 710). White was default because white people said so.

One of the ways that ethnology was used to attempt to prove this narrative was using the terminology and definition of masculine and feminine to distinguish races. For ethnologists, masculine would mean superior and feminine inferior. This meant that “gender [became a] racial designation” and

that “races were gendered, rather than those bodies biologically designated as male or female by sex” (Curry, 2017, “Ethnological Theories,” p. 3). This is hard to grasp—especially when considering our current understanding of masculine and feminine concepts. However, 19th century ethnologists likened the “brain of the Negro” to that of “a European woman” (Hunt, 1864, p. 10). This line of thinking was not just ethnologist jargon, but the rhetoric of European intellectuals of other fields. One British historian studying African societies in west Africa wrote, “if the women of Africa are brutal, the men of Africa are feminine,” and that their inherent “gentle and pacific natures” (Reade, 1864, p. 428) is indicative of their femininity as a race. This is what Anne McClintock refers to in *Imperial Leather: Race, Gender, and Sexuality in the Colonial Context*, when she says that “the rhetoric of *gender* was used to make increasingly refined distinctions among different races” (p. 55). It is important to note that in the nineteenth century, being gendered meant being civilized. Just like race, gender was another construct, made by European and European-descended thinkers, to distance the “savage” non-white races of the world from white Europeans. Gender, like in more contemporary concepts, was not necessarily tied to one’s self-ascribed identity or biological designation. It was an indicator of a race’s evolutionary development or lack thereof. Though this was a contradiction, ethnologists held that the white race is the superior, masculine race but maintained that gender-based distinctions within their race was a mark of superiority. In essence, because gender roles weren’t as clear cut for non-Europeans, it was deemed a mark of inferiority.

It was because of this that Haller (1971, p. 710) writes, “Ethnology became a means through which both scientists and social scientists sought to estimate the relative *value* of the races, delineate social categories, and help justify the dynamics of race legislation” (my italics). The “scientific” findings of ethnologists legitimated any immoral act or legislation that might have been enacted against a specific race; in essence, it justified colonialism. Nineteenth century European theorizations about race are riddled with references to Africans and African descendants as a feminine race whose innate pacific temper was reminiscent of—for Europeans—femininity, or sometimes even childishness. As Hunt (1864, p. 17) would have it, “It cannot be doubted that the brain of the Negro bears a great resemblance to a European woman or child’s brain, and thus approaches the ape far more than the European, while the Negress approaches still nearer to the ape.”

Through examining the historical ways in which the definitions and relationship of race and sex have shifted, one gains a better idea of the position Black men hold in the patriarchal system. Though it may be easier to write off Black men as direct or indirect beneficiaries of patriarchy simply because of their maleness (essentially reducing them to their genitalia) by simultaneously ignoring the historical complexity and fear the maleness in a Black body caused for Black men and the white landed gentry, respectively, it remains an ahistorical and simplistic understanding of what patriarchy is and how Black men are living, or more accurately, dying under it. In the same way that religion

was used to legitimize imperial expansion through Christian missions, ethnology was used as a secular way of proving non-white inferiority and justifying whatever oppressive and exploitative actions colonial powers deemed fitting.

The history of how race and sex were understood and disseminated by the dominant culture is critical because it provides a more accurate understanding of why oppressed and racialized groups today continue to be targeted by patriarchy. Simply put, historically, the idea that Black men *as a collective* benefit from patriarchy does not hold up. As Anthony Lemelle Jr. writes, “thinking of social life without history is a distortion of reality and an unscientific way of approaching things” (2010, p. 87).

The racial origins of “first-wave” feminist theory: A compromised beginning

In the “first wave” of feminism, mostly characterized by the suffragist movement spearheaded by the likes of Susan B. Anthony and Elizabeth Cady Stanton, was the 19th century mobilization that saw the efforts of elite white women win the fight for enfranchisement. The suffragist movement was closely tied to the antiracist movement of the late 19th century; it was a time that advanced a supposed “linked fate” of Black men and white women in their struggle to win suffrage. This argument is usually backed by the presence of Frederick Douglass at the historic Seneca Falls Convention of 1848. This supposed camaraderie was swiftly proved fruitless when the 15th Amendment to the U.S. Constitution passed in 1870 and supposedly gave Black men the right to vote and left white women to stand and watch. It was this critical moment in history that shifted, or rather *exposed*, the suffragist movement for what it really was: a way for white women to finally join the same socioeconomic position that white men enjoyed and “improve the electorate,” (as a poster from 1912 stated). White women intellectuals who led the movement did not celebrate the passage of this amendment as a progressive moment in history, but rather vehemently opposed and condemned the government for deigning to make “former slaves the political masters of their former mistresses” (Shaw, 2018, p. 419). Suffragettes of the “first wave” used white supremacy and the idea of “improving the electorate” with their civilized vote to convince the public (white men) that giving Black men the right to vote was a mistake. They appealed to that sense of kinship and sanctity of white womanhood to relay that they should vote. As leading suffragette Carrie Chapman Catt put it, “White supremacy will be strengthened, not weakened, by women’s suffrage” (1917). Anna Howard Shaw, another leading suffragist, was recorded to lament that “You have put the ballot in the hands of your black men, thus making them political superiors of white women” (2018, p.419)

In addition to their vehement opposition to the 15th Amendment, some women suffragists publicly encouraged lynching Black men as a means to protect the white woman and her vote. Rebecca Latimer Felton, suffragist and one-day U.S. senator, said, “If it requires lynching to protect woman’s dearest possession from ravening drunken human beasts, then I say lynch

a thousand negroes a week, if it is necessary” (McDuffie, 1979, p. 586). In *White Women's Rights*, Newman argues that “racism was not an unfortunate sideshow in the performances of feminist theory. Rather, it was center stage: an integral, constitutive element in feminism’s overall understanding of citizenship, democracy, political self-possession, and equality” (1999, p. 183). It was upon this racialized rhetoric and history that feminism was founded and rooted.

This idea of white women inferiority and victimhood is appealed to in dominance feminism—a type of feminism largely developed by feminist scholar Catherine Mackinnon that “attributes women’s inferior societal position to men’s concerted effort to subordinate and control women” (Mazingo, 2014, p. 337). This theory does not draw difference between white men and non-white men nor colonizer men and colonized men; it relies on the essentialist idea that all men are equally oppressive because of their masculinity. Feminism must fully confront these problematic origins in order to accurately theorize the effects of patriarchy on all groups and to ensure that the ongoing struggle for women’s equality results in gains for all marginalized groups.

Statistics on Black male’s perceived privilege

A good way to understand a given group’s privilege is by looking at measurable societal benefits; this can include life expectancy, domestic violence victimization, incarceration, political office presence, and education levels. If Black men truly benefit because of their maleness, the data should roughly reflect that.

Police shooting

When looking at the rate of police shootings in the United States from 2015 to May 2023 by ethnicity, a Statista study found that “5.8 per million of the [Black] population per year” were fatally shot (Statista Research Department, 2023). According to the *Washington Post*’s police shooting database, in 2022, 214 Black men, or 3% of all police shooting victims of 2022, were shot and killed by the police. When considering population size and the same data for other groups, this number becomes staggering². And according to the U.S. 2020 census, Black people made up 13% or about 45.3 million of the total population. If about half are males, that means about 6.5% of the total U.S. population made up about 3% of police shooting victims in 2022³. At this point in June 2023, there already have been 432 instances of deadly police shootings—55 of which were Black men, 1 was a Black woman, 96 were white men, and 5 were white women. Since 2015, a total of 8,520 people has been killed by the police according to the *Post*’s database. Black men made up 1,885 or 26% of that figure while Black women made up less than 1%, white women

² For example, in the same year, 9 Black women (<1%), 15 white women (<1%), and 372 white men (5%) were shot and killed (Washington Post Police Shooting Database*, 2022).

³ Contrastively, non-Hispanic white males and females, 29.7% of the population each (since about 59.3% in total were non-Hispanic white), make up 33.9% and 1.4% of all police shooting victims in 2022, respectively.

made up 3%, and white men made up 48%. The data shows that Black people generally are still disproportionately targeted by police shootings, and Black men specifically, make up a great proportion of those killed year after year.

Intimate Partner Violence/Sexual Assault⁴

Today's discussion of intimate partner violence (IPV) and sexual assault is largely one that has a perpetual male perpetrator and a female victim. This tendency has allowed the invisibility of Black men as potential high-risk victims of IPV or sexual assault in general. Tommy J. Curry argues that "it is often difficult to conceptualize male bodies as being victims of sexual violence, and even more so when the perpetrator of that sexual violence is female" (2018, p. 205) and cites multiple studies that converge on the fact that feminist theory has played a role here. In *Female Sexual Predators: Understanding and Identifying Them to Protect Our Children and Youth*, Karen Duncan writes "the view of females as victims of dominant males was developed in the historical context and sociopolitical view arising from radical feminist scholarship. This feminist framework has been a significant influence in the literature on child sexual abuse and adult rape for several years" (p. 14). When, for so long, a large part of the feminist narrative has been that Black males are brutes whose aggressive nature poses a sexual threat to females, it becomes increasingly difficult to see them as potential victims even though a great number of Black males in the US are in fact victims of sexual assault. In a 2017 study⁵ done by the National Intimate Partner and Sexual Violence Survey, it was found that 57.6% of adult Black males have experienced contact sexual violence, physical violence, and/or stalking by an intimate partner during their lifetimes (*National Intimate Partner and Sexual Violence Survey*, 2017). In a more recent study done for the population of NYC, Black males and females were found to be 1.9 times more likely to *report* IPV than any racial group and 2.5 more times more likely than white people (Wertheimer-Meier & Hill, 2022). If Black men were indeed benefitting from their maleness, they would not be the highest among men to be victims of sexual violence.

Incarceration

The disproportional higher incarceration rates among Black people as opposed to any other racial group in the United States has been a long-realized problem. Documentaries like *13th* have popularized the notion that slavery became institutionalized in the prison industrial complex through the 13th amendment and its slavery-allowing language: "Neither slavery nor involuntary servitude, except as a punishment for crime whereof the party shall have been duly convicted, shall exist within the United States." Despite this knowledge, however, disproportional incarceration rates among Black people remains a prevailing problem. According to the 2020 U.S. Census, the "Black or African

⁴ The studies cited in this section use the sexual designations of "male" and "female."

⁵ The most recent *national* study, linked in ref., done by the NISVS on IPV is the 2016/2017 report.

American, alone” population only makes up 13.6% of the entire population (U.S. Census 2020). And yet according to the Federal Bureau of Prisons, 61,108 or 38.5% of all prison populations are made up of Black people (Federal Bureau of Prisons, 2023). Though the incarceration rate of Black people in general has decreased overall, from 2020 to 2021, the number of Black inmates increased by 15% (U.S. Department of Justice, 2022). For Black males specifically, however, the same study found that 1,807 per 100,000 Black males (p. 26) were imprisoned in state or federal correctional authorities—higher than the white, Hispanic, Asian, and American Indian/Alaska Native male populations.

The fact that 13.6% of the population still makes up more than double that percentage of the prison population—and that the same population increased by 15% in one year—undermines whatever balm the overall decrease might offer. Black male patriarchy cannot be a valid framework to understand the positions and group experience Black men face when they are more likely than other racial groups to be in prison, despite contributing a significantly small number to the overall U.S. population.

Conclusion

When examining the tangible and measurable ways that privilege can manifest itself—longer life expectancy, little to no domestic violence victimization, and no disproportional incarceration—it becomes rather clear that Black men do not benefit from their maleness. If anything, when examining the historical ways Black men were seen by white slave owners—unfeeling brutes that posed a sexual threat to whiteness *because* they are male—it becomes even more clear that the relationship Black men have with patriarchy is not the same one that white men do. This paper attempts to challenge the narrative that “men” or “women” can be a term that can be applied and used without regard to race and that Black men can be theorized under the general auspices of “patriarchy.” This paper proposes that Black male life and Black masculinity is better understood by centralizing Black men’s experience and statistics that reveal what it actually means to be both Black and male. Scholars like Tommy J. Curry, Hasan Johnson, and many others continue to develop the Black Male Studies paradigm that attempts to understand the lives of Black men not through theories embedded in racist ideologies but rather the collective lived experiences backed by empirical data.



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RESEARCH ARTICLES

Barriers in Immigration Court: The Intersection of Language Accessibility and Due Process

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Limited English proficiency (LEP) is a significant challenge for persons appearing in the United States immigration court system. The courts often fail to provide adequate language services that address the problems of interpretation. The aim of my project is to investigate the nexus between language accessibility and due process by seeking to answer, “To what extent has the Fifth Amendment of the United States Constitution been an effective framework in promoting meaningful legal access to LEP individuals?” The Fifth Amendment of the United States Constitution provides that no person should be “be deprived of life, liberty, or property, without due process of law” (U.S. Const. amend. V). Without adequate language services, LEP persons cannot meaningfully participate in court proceedings, and are subsequently denied their entitlement to due process. Little attention has been given to this structural obstruction of justice revealing the need for a study about power and language in the immigration courtroom. To answer my research question, I analyze court decisions in which lawyers have utilized the Fifth Amendment to advocate for clients in Immigration Court and assess the success of those arguments. Results could inform whether judges are likely to interpret the Fifth Amendment as a protection of interests for LEP individuals in immigration court proceedings. With these findings, I hope to inform and assist legal advocates in improving accessibility essential to meeting justice in immigration court proceedings.

Introduction

Do noncitizens (the immigration system qualifies noncitizens as those who are foreign and/or do not possess legal documentation) entering the United States have access to constitutional protections? This question was answered by a series of court decisions in the late 19th century and early 20th century.

Wong Wing v. United States (1896)

In July 1892, under the Chinese Exclusion Act, Wong Wing was brought before a commissioner of the circuit court. The commissioner charged Wong Wing of being a person unlawfully within the United States and sentenced him to imprisonment and hard labor for 60 days prior to deportation. In response, Wong Wing sought a writ of habeas corpus, which was denied, and appealed to the Supreme Court. In May 1896, the Supreme Court affirmed Wong Wing’s petition and reversed the circuit court’s judgment. The Supreme Court ruled that Wong Wing’s due process right, protected by the Fifth Amendment, was denied when Wong Wing was sentenced to imprisonment and hard labor, a criminal punishment, without a jury trial (*Wong Wing v. United States*, 1896).

In United States constitutional law, the due process clause found in the Fifth Amendment guarantees no person should be “deprived of life, liberty, or property without due process of law” (U.S. Const. amend. V). Due process

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ensures that government functions proceed accordingly and provides full and fair hearings to all individuals. Until *Wong Wing v. United States* (1896), the court had not guaranteed this protection to noncitizens.

In *Wong Wing*, the court delivered that, “The term ‘person,’ used in the fifth amendment, is broad enough to include any and every human being within the jurisdiction of the republic. A resident, alien born, is entitled to the same protection under the laws that a citizen is entitled to” (*Wong Wing v. United States*, 1896). Through *Wong Wing*, the courts determined that the protections guaranteed by the Fifth Amendment apply to all on United States territory regardless of immigration or citizenship status.

***Yamataya v. Fisher* (1903)**

After the extension of constitutional protections became applicable to noncitizens, noncitizens could appeal their cases through a due process procedural, under which noncitizens could rest their claim on language inaccessibility. Through *Yamataya v. Fisher* (1903), the courts opened opportunity for petitioners to appeal their deportation orders if their procedural due process rights had been violated.

Yamataya petitioned to overturn a deportation order – she was deported upon being deemed a public charge and thereby inadmissible to stay within the United States. Yamataya, who did not speak English, challenged the order by alleging that her Fifth Amendment due process right was violated when her hearing was conducted in English without the assistance of a legal counsel, which subsequently produced incomplete evidence. In April 1903, the Supreme Court ruled against Yamataya’s petition. Though Yamataya’s deportation order was not reversed, the ruling created space in the judicial system for an immigration appeals process and opportunity for petitioners to allege due process violations in their appeal (*Yamataya v. Fisher*, 1903).

The Significance of *Wong Wing* and *Yamataya* for Due Process

Wong Wing and *Yamataya* set a precedence for noncitizens to invoke their right to due process under the claim of language inaccessibility. Following their legacy, petitioners sought to appeal their deportation orders utilizing their Fifth Amendment right, and the constitutional rights of noncitizens appeared to be as established as they are for citizens.

The legal research that I have conducted, however, uncovers discrepancies between constitutional protections in written form and their application in real court decisions. Therefore, *do noncitizens, in practice, have meaningful legal access to due process in immigration court proceedings?* Within the context of this project, meaningful legal access refers to one’s ability to participate in a full and fair hearing, undeterred by faulty language interpretation.

Noncitizens occupy a unique position within the legal system. Unlike citizens, they must prove their admissibility to stay in the United States. Moreover, some noncitizens may also have limited English proficiency (LEP). In the United States court system, English is the language of record. For LEP individuals, this creates a barrier that may impede their access to due process.

Without the assistance of competent language services, LEP individuals are denied a full and fair hearing. Without competent language services, LEP individuals cannot meaningfully participate in their hearings, the outcomes of which can destroy a person's livelihood. Within the context of removal proceedings, these outcomes include facing deportation, and/or be a matter of life and death, particularly within asylum proceedings.

Literature Review

Grace Benton and Pooja R. Dadhanian also sought to determine how noncitizens may be denied meaningful legal access to due process in immigration court proceedings. In particular, I reviewed Dadhanian's (2020) "Language Access and Due Process in Asylum Interviews" and Benton's (2020) work, "Speak English': Language Access and Due Process in Asylum Proceedings." Both papers address the denial of language access as a violation of due process and provide insight into difficulties that may arise for noncitizens in the court system when language needs are not met. Dadhanian provides greater focus on the obstacles that are embedded in the process of interpretation – including the lack of resources that the Department of Homeland Security provides to noncitizens to obtain a qualified interpreter. Dadhanian also defines what "quality" means in language interpretation and the consequences that result from a lack of quality. According to Dadhanian (2020), interpretation requires not only familiarity but linguistic expertise that may be overlooked such as knowledge of colloquial expressions and legal vocabulary. Benton shares Dadhanian's approach by focusing "Speak English': Language Access and Due Process in Asylum Proceedings" on the experiences of asylum-seekers but utilizes case law to a greater extent. Through case law, Benton illustrates how circuit courts have demonstrated a lack of willingness to treat language access as a constitutional right. Moreover, Benton's research on the functionality of due process for asylum seekers attests to the challenge presented by a legal procedure I refer to as the "prejudice requirement" (Benton, 2020). I found the harm produced by prejudice requirement in my research to align with Benton's conclusion. To support the findings of my research, I did not limit my data to include asylum seekers. Despite not focusing on the cases of asylum seekers, my research has supported Benton and Dadhanian's findings by affirming that noncitizens have been denied meaningful access to the protections offered by due process through language inaccessibility.

Methodology

To investigate the efficacy of the Fifth Amendment in protecting the due process right of LEP individuals, I examined thirty court decisions between 1980 and 2021 featuring LEP petitioners that sought to appeal their deportation order under the claim of a due process violation (refer to [Appendix A](#) to see all thirty court decisions). Court cases were included if they contained the following features: 1) the petitioner claimed their due process right was violated via language inaccessibility; 2) the petitioner was appealing a removal

order (includes petitioners who sought to appeal denial of asylum applications); and 3) the petitioner submitted evidence of language inaccessibility (includes incorrectly translated words, expression of difficulty understanding immigration judge through an interpreter, and unresponsive answers). I manually collected court cases through an online database, *Thomson Reuters Westlaw* (*Thomson Reuters Westlaw*: <https://1.next.westlaw.com>).

To prepare for this research, I conducted a review of scholarly works within the fields of immigration and sociolegal studies. My investigation for research concerning the relationship between due process and language inaccessibility proved limited, due to possibly two limitations: the absence of large corpus of works on this subject or my lack of access to legal institutions whose holdings may yield additional and relevant sources.

Findings

In this paper, I have divided my findings into two sets - one set relates to due process cases that were affirmed by an appellate court while the other relates to due process cases that were denied. I first assess the application of the due process procedure in an appellate court through select examples of petitions that were affirmed by an appellate court. Through this examination, I convey how appellate judges acknowledge language inaccessibility as a due process violation. In the next section, I scrutinize how appellate judges contradict their acknowledgement of the dangers of language inaccessibility by enforcing a harmless error or prejudice requirement. In this section, I focus on select petitions that were denied by an appellate court.

Due Process as Protection for LEP Individuals in Immigration Court

In the thirty studied cases, courts were consistent in their acknowledgement that removal proceedings must include access to an interpreter for LEP individuals in order to be fundamentally fair. In their delivered opinions, appellate judges noted the intricacies of language interpretation and conveyed the importance of clarity and mutual understanding between the petitioner and immigration judge. Appellate judges contained both an awareness and concern regarding the abuses immigration judges may commit in not ensuring a petitioner had full access to competent language services. This awareness is acutely highlighted in *Jacinto v. Immigration and Naturalization Service* (2000), where Circuit Judge Bright delivered an opinion that stated the following:

Further, [noncitizens] often lack proficiency in English, the language in which the proceedings are typically conducted [...] the language barrier presents the potential to affect the ability of the alien to communicate and the ability of the immigration judge to understand what is being stated (*Jacinto v. Immigration and Naturalization Service*, 2000).

In December 1994, Jacinto filed an affirmative asylum application with the Immigration and Naturalization Service (INS). Following two hearings, the immigration judge denied Jacinto's application for asylum, withholding of deportation, and voluntary departure. The immigration judge found that Jacinto's testimony throughout the proceedings was not credible. Jacinto sought to appeal the immigration judge's decision to the Board of Immigration Appeals (BIA), arguing that her right to a fair hearing had been denied. The Board determined that the immigration judge did not violate Jacinto's due process rights and affirmed the immigration judge's decision.

Jacinto then petitioned the Court of Appeals for the Ninth Circuit arguing that the Board failed to identify that the immigration judge violated her due process right to a full and fair hearing. Opposing the Board's decision, the appellate court held that Jacinto had not received a full and fair hearing as promised by due process and granted her a new hearing with an immigration judge. In *Jacinto*, the judges examined a transcript of Jacinto's asylum hearing process. The transcript revealed many examples of Jacinto's confusion and difficulty understanding the immigration judge's prompts. The circuit judges agreed that the transcript proved Jacinto's inability to understand the immigration judge's prompts and obstructed her from having a full and fair hearing (*Jacinto v. Immigration and Naturalization Service*, 2000).

This sentiment is strikingly reiterated in the case *B.C. v. Attorney General United States* (2021), where Circuit Judge Ambro delivered the opinion of the court, which stated the following: "Small inconsistencies in a noncitizen's testimony can doom even those cases that might otherwise warrant relief. To ensure testimony is not unfairly characterized as inconsistent, a noncitizen must be able to communicate effectively with the officials deciding his case" (*B.C. v. Attorney General United States*, 2021).

In *B.C.*, the petitioner appealed to the Court of Appeals for the Third Circuit after the denial of his asylum application was affirmed by the BIA. Petitioner B.C. primarily speaks in "Pidgin" English, he reported that he had limited proficiency in "Standard" English. In granting his petition, the circuit judges referred to the ways immigration officials failed to ensure that B.C. received competent language services. During his interviews and hearings, B.C. was either assumed to have full proficiency in "Standard" English or was only given the limited options of "English or Spanish" and "English or French." The circuit judges also note that despite cues that B.C. had LEP, he was not provided an interpreter. These shortcomings resulted in unclear communication, evident from the provided records of the hearings. On this account, the circuit court held that the immigration judge violated the petitioner's due process right and granted him a new hearing (*B.C. v. Attorney General United States*, 2021).

Appellate judges extended this judgment to many other cases. Of the thirty reviewed cases, eight petitions were accepted, including *Jacinto* and *B.C.* Through these cases, it is evident that the courts are willing to acknowledge the significance of language accessibility in the courtroom. The inconsistencies

identified by the judges in the interviews from *Jacinto* and *B.C.* proved substantial for the courts to determine that language inaccessibility was a violation of their rights. In these court decisions, the judges plainly recognized that language barriers can prove detrimental to the fairness of a hearing. The other six accepted petitions, not explored in this paper, fared similarly - the courts held that language accessibility is a need that must be met for removal proceedings in immigration court to be considered fair. However, the abundance of due process violation claims regarding language accessibility appears to demonstrate prejudicial outcomes and that this need is not being consistently met.

Language interpretation is an inherently nuanced area and because faulty interpretation is liable to happen, the legal system must offer a solid and consistent countermeasure to ensure that language inaccessibility does not determine an LEP individual's removability. What does this understanding mean for the denied petitions? Of the thirty reviewed cases, twenty-two petitioners who claimed their due process was violated on the basis of language inaccessibility were denied. The next section will explore what differentiated this subset from the petitioners who were granted legal reparation.

The Weaknesses of Due Process as Protection for LEP Individuals in Immigration Court

Effective communication in immigration hearings is critically necessary in reaching a just outcome and this is not limited to only those who communicate in the English language. Without this, it is possible for very minor mistakes to result in irreparable damage to a petitioner seeking to avoid deportability. In *Jacinto* and *B.C.*, the circuit judges articulated this caution. In spite of this acknowledgment by judges, many of the petitioners in the cases I reviewed were dismissed based on the substantiality of their evidence of language inaccessibility. Investigating these court decisions revealed the grave finding that judges inconsistently approached the severity of language inaccessibility, which I developed from visible patterns in rejected petitions.

Within the rejected petitions I reviewed, I uncovered a process often interchangeably referred to as a harmless error or prejudice requirement. The harmless error is a legal procedure that requires a petitioner to go beyond proving that an abuse of discretion was committed by the immigration judge - they must also show that the abuse prejudiced the outcome of their removal proceeding. Cornell Law School defines the harmless error as, "An error by a judge in the conduct of a trial that an appellate court finds was not damaging enough to the appealing party's right to a fair trial to justify reversing the judgment" (Legal Information Institute, n.d.). In the context of language interpretation, this can be quite difficult to prove. In the aforementioned affirmed cases, the appellate judges acknowledged that even minor mistakes in language interpretation can cause pivotal damage to an individual's case. Though the appellate judges in many of the reviewed cases agreed with this judgement, some cases have demonstrated that this judgement may not be applied consistently.

Tejeda-Mata v. Immigration and Naturalization Service (1980) illustrates this inconsistency and the controversy surrounding the prejudice requirement. In *Tejeda-Mata*, the petitioner sought to appeal an order of the BIA rejecting his appeal from an immigration judge's order of voluntary departure. Prior to his hearing with the immigration judge, the petitioner was inspected by an immigration officer at his vehicle. During this interaction, the officer asked the petitioner who he was. When it appeared that the petitioner did not understand, the officer asked in Spanish where the petitioner was from. The petitioner replied that he came from Mexico. The officer had also asked the petitioner if he had family or possessions in the United States – to which the petitioner initially answered no but later affirmed that he did. When the petitioner also refused to sign a request for voluntary departure form, the officer prepared an INS Form I-213 (*Tejeda-Mata v. Immigration and Naturalization Service*, 1980). Form I-213 (*Sample Form I-213 PDF*) is also known as “Record of Deportable/Inadmissible Alien,” and the document “sets forth the respondent’s biographic information; date, place, time, and manner of entry to the United States; immigration record and any history of apprehension and detention by immigration authorities; criminal record, if any; family data; any health or humanitarian aspects; and disposition” (Collopy et al., 2014, pp. 523–524). The Form I-213 prepared by the immigration officer was admitted into evidence at the petitioner’s later hearing.

At the petitioner’s deportation hearing, the petitioner testified the circumstances of his arrest with the help of an interpreter. The petitioner refused to answer questions regarding his citizenship and entry into the United States, fearful that these would incriminate him. However, the petitioner admitted that he had told the immigration officer he came from Mexico. The petitioner’s counsel requested to have the officer’s testimony translated into Spanish by the official interpreter. The request for translation was denied by the immigration judge. The petitioner’s counsel followed with offering to translate the testimony himself, for convenience of having a simultaneous translation. The immigration judge rejected this request as well. At the conclusion of the hearing, the judge issued the petitioner’s voluntary departure.

The petitioner sought to appeal this order through the BIA, which rejected his appeal. Following this rejection, the petitioner sought the Court of Appeals for the Ninth Circuit to appeal the BIA’s decision. The petitioner argued that he was denied due process when the immigration judge refused his translation requests. The Ninth Circuit acknowledged that the judge’s refusal was an “abuse of discretion” and not in accordance with due process, but ultimately rejected the petitioner’s claim on the grounds that the abuse was “harmless” (*Tejeda-Mata v. Immigration and Naturalization Service*, 1980).

The dissent, delivered by Circuit Judge Ferguson, held that the harmless error standard was unsupported. Ferguson stated,

The majority notes the due process requirement, and points out that ‘this court and others have repeatedly recognized the importance of an interpreter to the fundamental fairness of such a hearing if the alien cannot speak English fluently.’ The majority implicitly acknowledges that the denial of Tejeda-Mata’s request for an interpreter constituted a denial of due process, but it holds that the denial was harmless. I submit that a denial of due process which is as fundamental as the denial here is not subject to review for harmless error. Furthermore, even if the harmless error standard were appropriate here, the error at issue was undoubtedly harmful (*Tejeda-Mata v. Immigration and Naturalization Service*, 1980).

I chose to present the case of *Tejeda-Mata* because it is one of the few cases I reviewed that contained a dissenting opinion, of which articulated the greatest issues facing the harmless error. Ferguson’s dissenting opinion highlights several issues embedded in the case of *Tejeda-Mata* that we can apply broadly to the harmless error or prejudice requirement. The majority in *Tejeda-Mata* believes that the translation request would not have influenced the immigration judge’s finding of deportability. However, how can they be sure that there was no harm from the judge’s refusal to offer translation? Even the existence of a dissenting opinion demonstrates that there is a possibility of harm.

Form I-213 can produce immense harm against a petitioner in a removal proceeding. As The American Immigration Lawyers Association argues,

A Form I-213 can contain damaging information about the respondent that can have far-reaching effects...Source problems, inaccurate information, lack of detail, a gap in time between when the information was collected and when the I-213 was created, the inability to cross-examine the preparer of the I-213, and coercion or duress are all potential challenges to the I-213 and the information contained therein (Collopy et al., 2014, p. 524).

That the immigration judge’s finding of deportability relied at least partially on this document shows a great potential of harm for Tejeda-Mata’s petition - in addition to the petitioner being denied access to the document’s contents.

As Ferguson points out, the majority acknowledged that the refusal constituted a due process violation but dismissed the petitioner’s appeal because they were unable to consider how damage could have resulted from the translation fault. This additional burden of having to demonstrate harm weakens constitutional protections for LEP individuals like Tejeda-Mata and effectively creates a false promise of due process.

The rhetoric of harmless errors continues. In the case of *Gutierrez-Chavez v. Immigration and Naturalization Service* (2002), the Ninth Circuit denied the petitioner's due process violation claim stating,

To make out a violation of due process as the result of an inadequate translation, Gutierrez must demonstrate that a better translation likely would have made a difference in the outcome. While it is true that there are several instances in the record where some confusion results from the cumbersome translation process, Gutierrez is ultimately unable to point to anything, other than his mere assertions, indicating that his credibility was so diminished as to likely change the outcome of the hearing. We therefore reject Gutierrez's due process claim based on an inadequate translation (*Gutierrez-Chavez v. Immigration and Naturalization Service*, 2002).

Gonzalez-Ortega v. Garland (2021) is a more recent case where the Ninth Circuit dismissed the petitioner's appeal with similar reasoning,

While Gonzalez Ortega argues that the [immigration judge] should have used a Huichol interpreter rather than a Spanish interpreter at the hearing, he has not shown that 'a better translation would have made a difference in the outcome of the hearing' (*Gonzalez-Ortega v. Garland*, 2021).

The harmless error or prejudice requirement is a procedure within the appellate court that contains catastrophic effects. It is a high burden to place on individuals who already occupy vulnerable positions given their legal status. And for those appealing removal orders, the stakes are even higher. A denied petition means deportation, which for asylum seekers may also be the difference between life and death. LEP individuals experience a heightened vulnerability by having to rely on others to communicate their narrative. Moreover, the harmless error is too nuanced an area for judges to come to a resolution – as critically demonstrated in *Tejeda-Mata* as an example of a case in which the judges disagreed on the potential of harm from the language inaccessibility.

As Circuit Judge Ferguson illustrates in the dissenting opinion of *Tejeda-Mata*, the harmless error serves as a foil to due process, rather than an instrument of support. Even though the judges affirmed that Tejeda-Mata demonstrated a due process violation, his petition was dismissed based on his inability to pass the burden of proving harm. What does this say about the integrity of the due process framework? The additional step of proof creates an understanding that it is not enough to have suffered from a loss of a constitutional right. By theory, if a petitioner is able to prove a due process violation, they should be entitled to receiving reparation. A constitutional violation is a high offense, and to prove a due process violation is difficult in itself.

Conclusion

The examples of *Jacinto v. I.N.S.* (2000) and *B.C. v. Attorney General United States* (2021) express the court's acknowledgement of language inaccessibility. Within these court decisions, the appellate judges articulated the dangers that accompany language barriers in a court proceeding and determined language accessibility as an extension of an individual's due process right. While this determination was evident in these petitions, I uncovered inconsistencies when I investigated the denied petitions. The use of a harmless error, or prejudice requirement, within *Gutierrez-Chavez v. I.N.S.* (2002), *Gonzalez-Ortega v. Garland* (2021), and most notably, *Tejeda-Mata v. I.N.S.* (1980), expresses an obstruction to the promised protection of due process. To determine resulting harm or prejudice from a language barrier is a difficult feat, not only for the petitioner but the appellate judges as well. Accordingly, the harmless error can gravely limit an LEP's meaningful access to fair court proceedings and unjustly raise standards for noncitizens to meet to prove language inaccessibility.

Future scholarship should consider what steps can be taken to resolve incompetent language services and the court's response to the issue. To conduct this research, the scholar should consider how resolutions will require collaborative efforts from nonprofit organizations, policy makers, as well as legal actors. The immigration court system is an overwhelmingly burdened structure, and as such will require nuanced approaches to address issues such as language inaccessibility. In addition to research on resolutions, I would also expand on this project by paying closer attention to how interactions with the Immigration Court System may differ depending on the native language of the petitioner. For instance, there are fewer resources (i.e., interpreters) for individuals who speak indigenous languages and/or dialects that are outside what are considered common languages by the United States court system. Resultantly, individuals who speak these less-resourced languages may experience different risks in immigration court proceedings.



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- Jacinto v. Immigration and Naturalization Service*, 208 F.3d 725, (9th Cir. 2000).
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Appendix A. Court Decisions Collection

Court Case:	Petition Accepted/ Denied:	Appellate Court:	Notes on basis of claim (as stated in court document) ¹ :
Amadou v. I.N.S., 226 F.3d 724 (6th Cir. 2000)	Accepted	United States Court of Appeals, Sixth Circuit	"interpreter assigned to translate applicant's Fulani dialect was incompetent"
Tung Van Dinh v. U.S. Atty. Gen. 618 Fed.Appx. 464 (2015)	Denied	United States Court of Appeals, Eleventh Circuit	mistranslations by interpreter
Matias v. Sessions, 871 F.3d 65 (1st Cir. 2017)	Denied	United States Court of Appeals, First Circuit	mistranslations by interpreter
Zaien Chen v. Mukasey, 271 F. App'x 104 (2d Cir. 2008)	Denied	United States Court of Appeals, Second Circuit	mistranslations by interpreter
Chichilanov v. Garland, 850 F. App'x 29 (2d Cir. 2021)	Denied	United States Court of Appeals, Second Circuit	mistranslations by interpreter
Tun v. Gonzales, 485 F.3d 1014 (8th Cir. 2007)	Accepted	United States Court of Appeals, Eighth Circuit	"evidence of mistranslated words, evidence that witness was unable to understand translator, and unresponsive answers from witness"
Augustin v. Sava, 735 F.2d 32 (2d Cir. 1984)	Accepted	United States Court of Appeals, Second Circuit	erroneous translation of asylum application
Santos v. Ashcroft, 103 F. App'x 232 (9th Cir. 2004)	Denied (in part)	United States Court of Appeals, Ninth Circuit	expressed difficulty in understanding translations
Morales-Gonzalez v. Sessions, 742 F. App'x 120 (6th Cir. 2018)	Denied	United States Court of Appeals, Sixth Circuit	"failure to provide [petitioner] with written notice to appear at removal proceedings in Spanish"
Tejeda-Mata v. Immigr. & Naturalization Serv., 626 F.2d 721 (9th Cir. 1980)*	Denied	United States Court of Appeals, Ninth Circuit	"denial of request for simultaneous translation of immigration officer's testimony"
El Rescate Legal Servs., Inc. v. Exec. Off. of Immigr. Rev., 959 F.2d 742 (9th Cir. 1991)	Denied	United States Court of Appeals,	"challenged policy of failure to provide full translation of deportation and exclusion hearings"

Court Case:	Petition Accepted/ Denied:	Appellate Court:	Notes on basis of claim (as stated in court document) ¹ :
		Ninth Circuit	
Niang v. Ashcroft, 96 F. App'x 341 (6th Cir. 2004)	Denied	United States Court of Appeals, Sixth Circuit	translator at asylum hearing was not present for entire hearing
United States v. Lopez-Collazo, 824 F.3d 453 (4th Cir. 2016)	Denied	United States Court of Appeals, Fourth Circuit	"failure to provide defendant with a Spanish translation of the charges in the Notice of Intent to Issue a Final Administrative Removal Order (NOI)"
Perez-Lastor v. I.N.S., 208 F.3d 773 (9th Cir. 2000)	Accepted	United States Court of Appeals, Ninth Circuit	mistranslations by interpreter
Xin Yang v. Holder, 747 F.3d 993 (8th Cir. 2014)	Denied	United States Court of Appeals, Eighth Circuit	mistranslations by interpreter
Vasquez-Acevedo v. U.S. Att'y Gen., 131 F. App'x 182 (11th Cir. 2005)	Denied	United States Court of Appeals, Eleventh Circuit	mistranslations by interpreter
Drobny v. I.N.S., 947 F.2d 241 (7th Cir. 1991)	Accepted	United States Court of Appeals, Seventh Circuit	failure to provide translator after expressing difficulty
Agbor v. Barr, 810 F. App'x 545 (9th Cir. 2020)	Denied	United States Court of Appeals, Ninth Circuit	absence of Pidgin English interpreter
Kuqo v. Ashcroft, 391 F.3d 856 (7th Cir. 2004)	Denied	United States Court of Appeals, Seventh Circuit	interpreter at hearing spoke different dialect
Aymo v. Sessions, 742 F. App'x 237 (9th Cir. 2018)	Accepted	United States Court of Appeals, Ninth Circuit	mistranslations by interpreter
Mendia-Aquino v. U.S. Atty. Gen., 398 F. App'x 484 (11th Cir. 2010)	Denied	United States Court of Appeals, Eleventh Circuit	"failure to submit Spanish-language version of asylum application into the record"
Filipi v. Gonzales, 127 F. App'x 848 (6th Cir. 2005)	Denied	United States Court of Appeals,	incompetent interpreter services

Court Case:	Petition Accepted/ Denied:	Appellate Court:	Notes on basis of claim (as stated in court document) ¹ :
		Sixth Circuit	
Jacinto v. I.N.S., 208 F.3d 725 (9th Cir. 2000)*	Accepted	United States Court of Appeals, Ninth Circuit	difficulty understanding questioning
B.C. v. Att'y Gen. United States, 12 F.4th 306 (3d Cir. 2021)*	Accepted	United States Court of Appeals, Third Circuit	"IJ did not conduct an adequate initial evaluation of whether an interpreter was needed and took no action even after the language barrier became apparent"
Gutierrez-Chavez v. I.N.S., 298 F.3d 824 (9th Cir. 2002), opinion amended on denial of reh'g, 337 F.3d 1023 (9th Cir. 2003)*	Denied	United States Court of Appeals, Ninth Circuit	mistranslations by interpreter
Lam v. Ashcroft, 128 F. App'x 830 (2d Cir. 2005)	Denied	United States Court of Appeals, Second Circuit	interpreter at hearing spoke different dialect
Alhousseini v. Sessions, 751 F. App'x 674, 677 (6th Cir. 2018)	Denied	United States Court of Appeals, Sixth Circuit	mistranslations by interpreter
Gonzalez-Ortega v. Garland, 851 F. App'x 44 (9th Cir. 2021)*	Denied	United States Court of Appeals, Ninth Circuit	interpreter at hearing spoke different dialect
Pierre v. Sessions, 745 F. App'x 173 (2d Cir. 2018)	Denied	United States Court of Appeals, Second Circuit	mistranslations by interpreter
Yambao v. I.N.S., 113 F.3d 1244 (9th Cir. 1997)	Denied	United States Court of Appeals, Ninth Circuit	failure to provide interpreter after expressing difficulty

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RESEARCH ARTICLES

The Role of Spanish-Language Press in the 19th-Century United States

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This research examines the perspective of Spanish-language newspapers and their viewpoints and perspectives on slavery and American politics with the institution of slavery from the origin of the Spanish-language press to the mid-1850s. The project intends to promote the use of Spanish-language primary sources in the overall American experience and format of establishing history as the dominant form of narrative administered in English in the classroom and textbooks and written material. The research begins where the news companies first began printing and how over time, the Spanish-speaking presses started to shape into progressive companies that investigated the injustices of slavery and documented unique perspectives of how to address specific aspects of the institution of slavery and document lived experiences of those who endured bondage. The second aspect of this project is to focus on the importance of Mexicans who lived in Mexico (Texas and California) and how becoming Americans shaped their perspective in printing stories on African Americans. My research is in the early process of discerning the importance of how different groups of Spanish speakers documented their view of America. The most critical aspect highlights the distinctions in investigating and reporting newspapers from Cuban, Mexican, and Spanish press companies in the United States in the 19th century.

Introduction

A common misconception in the U.S. is that English is the official language because it is the language most spoken in official settings such as Congress and most used in legal documentation. Although English was the dominant language in the creation of the U.S. with the Declaration of Independence, some of the founders spoke a variety of European languages, such as French and Spanish, and decided not to institute English as the official language. Spanish is in fact the oldest spoken European language in the U.S., with the arrival of the Ponce de Leon (1513) and colonization of Florida with St. Augustine (1565) predating the English Jamestown (1607). Yet Spanish is regarded as an immigrant language or a language of “foreignness” (Lozano, 2018, p. 2). We see this tendency in how U.S. history research is conducted and taught as well. Non-English texts and sources are rarely considered, even when they existed at the same time and place as the English-language sources historians rely on instead. The focus of this study is to illustrate the importance of the perspectives Spanish-language newspapers provide on American history in the 19th century. Specifically, I focus on the origin of the Spanish-language press in America and on Spanish-language newspapers’ perspectives on slavery and Black Americans in the first half of the 19th century. Based on my translation and analysis of more than forty articles in eleven Spanish-language

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publications, I argue that, from its inception to the Civil War, as the influx of Spanish speakers to the U.S. increased, the Spanish-language press progressively provided a global and abolitionist coverage in free and enslaved states.

Origin of Spanish-Language Newspapers in the U.S.

At the beginning of the 19th century, modern-day Mexico, Florida, and several Caribbean islands were part of New Spain, the colonized territories of Spain. Many of the individuals who became part of the Spanish-language press from its origin to the 1850s were Hispanic exiles who migrated to America to advocate for independence, especially in Cuba and other New Spain territories in the western hemisphere (Kanellos, 2009). Many of the earliest stories published in the Spanish-language press were translated from established English-language newspapers, with some exceptions. The early Spanish-speaking press would often add original contributions to their sections that were translated from English and French variations for their audience.

The majority of Spanish-language newspapers printed in the 1850s came from Southwest territories acquired following the Mexican-American War (1846-1848), especially New Mexico, California, and Texas. However, the first Spanish-language newspaper published in the U.S. was *El Misisipi*, printed in New Orleans, Louisiana, in 1808 (*Chronicling America*, 2007). Printing lasted for roughly two years before it ceased publication. At the time of its creation, *El Misisipi* was written primarily in Spanish, with English-language advertisements scattered in various sections of the page. One of the first stories printed from *El Misisipi* was published on October 12, 1808; it sold for eight pesos in New Spain's currency and was both a translation of a previous story and kept the Spanish-speaking community informed about the advocacy of Spain and its territories of New Spain (Napoleon's nephew, Napoleon III was currently the King of Spain). The story had been printed in the *Boston Chronicle* but originated from a tabloid in Spain:

primeras dignidades del Clero. El Rey puso las manos sobre los santos evangelios y prononció su juramento en la forma siguiente , tan agradable à la constitucion. Juro sobre los santos evangelios respetar y hacer que sea respetada nuestra religion : observar y hacer que se observe la

constitucion : conservar la integridad é independencia de la España y de sus posesiones : respetar y hacer que se respete la libertad personal y propiedad ; y gobernar con solo la mira del interes , felicidad y gloria de la Nacion Española."


The King laid his hands on the holy gospels and swore his oath in the following way, pleasing the constitution. I swear on the holy gospels to respect and make our religion respected: observe and make the constitution be observed: preserve the integrity

and independence of Spain and its possessions: respect and make personal freedom and property respected; and govern with only the aim of the interest, happiness, and glory of the Spanish Nation. ("Boston Septiembre 5," 1808) (my translation)

As exiles and defectors observing from America, the Spanish-speaking news press was able to critique and exercise the right to protest and advocate for progress in the territories of New Spain. However, *El Misisipi* deliberately chose to integrate the promise of the new Spanish king. In doing so, *El Misisipi* offered a glimpse of hope for those who wished to return to their Spanish-speaking countries of origin. Having a voice in the media for Spanish speakers was critical to those who became Americans in a nation that nearly exclusively spoke English. At the time of publishing, Louisiana was an American territory populated by French and Spanish inhabitants. *El Misisipi* was heavily influenced by the American and French ideologies of revolution and individual rights. The desire for independence was embedded in the origin of Spanish-language newspapers in the U.S., where many of the individuals who came from territories in New Spain to publish newspapers sought independence from Spain. As exiles in America, their voices in the U.S. press shared similarities to those who sought independence from the tyranny of Britain in the 18th century in the American Revolutionary War (1775-1783).

Between 1808 and the late 1820s, New Orleans (*Chronicling America*, 2007), was the only U.S. territory or state to have Spanish-language newspapers (*The Rural West Initiative*, 2011). Before France reacquired Louisiana, it was a Spanish territory from 1763 to 1803. Spanish was one of the dominant languages in New Orleans but would soon be overshadowed by the French and English presence when it became a U.S. territory in April of 1803. The most successful and consistent newspaper published in Louisiana in the 19th century was *L'Abielle*. It was founded in 1827 as a French newspaper but integrated English and Spanish two years later. The English version registered as *The Bee* while the Spanish variation was labeled *La Abeja*, but both were embedded into the primary French-language paper with their own pages separated and sectioned by language. The most significant aspect of *La Abeja* was that their news coverage was not translated from English-language stories published elsewhere but were original articles written in Spanish. The only section translated from English to Spanish was an advertisement, published multiple times, for the return of enslaved people who had escaped the plantations and confinement of their masters. In 1808, the U.S. government banned the importation of enslaved people from Africa. In doing so, New Orleans became the hub of the domestic slave trade in the U.S. until the Civil War. The English and French sections of the newspaper published additional notices about rewards for their capture and return of escaped slaves, but only the highest-paying rewards were listed in Spanish. On August 5th and 7th, 1830, *La Abeja* published the same advertisement for the reward for the return of an enslaved person:

\$50 DE RECOMPENSA.



Ha fugado de la casa del que sub-
crive el día 2 del corriente, el mulato
criollo nombrado DELPHIN, su edad
23 años, de oficio ebanista, estatura de
5 piez mas ó menos; habiendose lle-
vado el mencionado Delphin, doce
camisas finas, otros tantos pantalones blancos y
una levita negra, perteneciente á su amo, es de
suponerse que andará bien vestido.

La recompensa mencionado será entregada á
la persona que lo entregase á su amo ó lo hiciese
retener en cualquiera de las prisiones del Estado.
Se previene á los capitanes de buques, stimbo-
tes, y demas, no admitan al ausdicho esclavo
bajo la pena de ser perseguido con todo el rigor
de las leyes.

FRANCOIS A. AVART.

On the 2nd of this current day, the Creole mulatto named DELPHIN, his age 23, cabinetmaker by trade, height of 5 feet more or less, has fled from the house of the undersigned, the aforementioned Delphin having taken twelve fine shirts, as many white pants and a black frock coat, belonging to his master, it can be supposed that he was well dressed. The aforementioned reward will be delivered to the person who delivers it to his master or has him retained in any of the State prisons. Captains of ships, steamboats, and others are warned not to admit the aforementioned slave under penalty of being persecuted with all the force of the laws. FRANCOIS A. AVART. ("Despotismo," 1830) (my translation)

It should be noted that at this point in U.S. history, legal action could have been taken if one was to house an enslaved person who ran away; it is also significant that only the highest reward was distributed in the Spanish variation of the press as a reminder of what readers should do if they found themselves in the situation. Having only the highest payment listed in Spanish could also insinuate that Spanish speakers were not as uninvolved in the institution of slavery as predicted. Due to the fact that the Spanish section of *La Abeja* primarily produced different news than the English and French sections of the paper, New Orleans had a consistent audience of Spanish-speaking readers. The same can be said for the English and French audiences because in the same paper other enslaved people's bounties for recapture and slave market listings were exclusively published apart from the Spanish sections. It is important to understand why the French and English sections of the paper included all slave markets and listings of prices of human beings that were sold at auctions,

while the Spanish language section included only notices of the very highest rewards for runaway enslaved persons. While this newspaper came from one localized area of New Orleans, it is essential to note the important role that the slavery hub of New Orleans played. The fact that the slave market listings were not translated into Spanish and included in that section of the paper might suggest that Hispanic Americans, at least in New Orleans at the time, did not own enslaved people or possibly did so less frequently than English or French-speaking Americans in Louisiana based on the publication of news and coverage of enslaved people. The other plausible cause is that the Spanish-speaking press was more progressive than their French and English counterparts or that the authors of the press were viewed as of a lower ethnic status. This is a critical aspect of examining why only the Spanish-language publications were left out of the auction houses and listings, as they perhaps did not play an immediate role in the slave market in New Orleans.

Spanish-Language Newspapers in the Former Mexican States

The Spanish-language press in the north might be expected to be fairly unique, relative to that of southern states, because the ideologies of abolition were already strong there, especially by the 1850s. Following the Mexican-American War, however, newfound states with large Mexican and other Spanish-speaking communities published articles about territories of New Spain, as did English-language media, but their perspectives on Black Americans were profoundly distinct. Texas was the only slave state that was acquired from Mexico. Mexico fought against slavery when Americans began moving west into Texas. However, after Texas was annexed and became a state in the 1840s, the Mexican population that stayed in Texas seemed to have remained opposed to the institution of slavery. The first Spanish-language newspaper in Texas was produced in San Antonio under the name *El Bejareno*. The Library of Congress has no documentation of *El Bejareno*. The Hispanic American Newspapers Readex database has recorded the two years of publication, but the only other recorded entry of its press that could be found was in the University of California, Berkeley's Chicano Studies Library. Bejarano refers to a person from Béjar, a town in Spain. The title of *Bejareno* may be in reference to those individuals born in Spain. However, since *El Bejareno* is documented as a Chicano press, it was registered explicitly as a Mexican press which could mean that they are descendants of Spaniards from that localized area. *El Bejareno*, like a majority of the other Spanish-language newspapers, communicated news coverage of other Spanish-speaking nations, such as Spain and Mexico, along with several Central and South American countries. Where they differed was that most of their articles concerning enslaved people were documentation of formerly enslaved people in the region. "Sombreros" was one of the published articles:

Una cachucha ó gorra se hizo entonces la insignia de libertad, y al libertarse á un esclavo, se le presentaba una, dandose le permiso de usarla en publico. La ceremonia de manumitir á un esclavo se hacia de la siguiente manera:—Se traia al esclavo ante el Consul, el amo poniendo la mano sobre la cabeza del esclavo, y dirijiendose al Consul decia: “Deseo que este hombre sea libre.” En

seguida, le tomaba la mano dejandosela caer luego. De donde procede la palabra latina, *manumisio* y la frase, *e manu emittere*, (el soltar de la mano.) El amo en seguida le daba una palmada en la mejilla, y el Consul tocandole con su vara pronunciaba estas palabras:—“Yo te declaro libre segun la costumbre de los Romanos.”

A cap or hat was then made the badge of freedom, and when a slave was released, one was presented to him, giving him permission to use it in public. The ceremony of manumitting a slave was done as follows: The slave was brought before the Consul, the master putting his hand on the slave's head, and addressing the Consul said: “I wish this man to be free.” Immediately, I took his hand and let it fall later. Where does the Latin word come from, *manumisio* (free, release) and the phrase, *e manu emittere*, (the release of the hand). The master then slapped him on the cheek, and the Consul touching him with his rod pronounced these words: “I declare free according to the custom of the Romans.” (*El Bejareno*, 1855) (my translation)

The coverage of the emancipation of an enslaved person is noteworthy, considering that a decade later, Texas would be the last state to enact the 13th amendment creating the federal holiday Juneteenth. When I began my research, I initially assumed that I was going to find direct, indisputable evidence that Hispanic, Spanish-speaking Americans owned enslaved people and supported the institution of slavery. The further I progressed in my research on the origins of the Spanish-language press, I noticed patterns that Spanish-speaking Americans were displaced as undesirable in the east and original colonies compared to other white European migrants that mostly spoke English or another (non-Spanish) language. Mexican Americans typically had abolitionist ideologies from both Mexico abolishing slavery 30 years prior and had likely also experienced discrimination. These factors may have greatly contributed to the desire to publish manumissions (the formal act of emancipation). *El Bejareno*, as an example, publicly referenced and supported formerly enslaved people frequently that were emancipated.

El Bejareno's documentation of Blacks and African-Americans included the freedom of enslaved peoples, but there also was a contribution to covering other news of enslaved people. It should be noted that San Antonio had a cultural bond with Mexico with the immense population of Mexican Americans. That may account for the Spanish-language press coverage of African American the lack of publishing of slave listings, prices, or compensation for those who ran away like other newspapers in Louisiana. *El*

Bejareno was founded in San Antonio nearly two decades after the Battle of the Alamo (1836) and fought to return the institution of slavery to Mexico, which outlawed slavery in 1829. The Mexican government had attempted to prevent enslavers from migrating to Texas with legal barriers to prevent chattel slavery, but the Battle of the Alamo was a precursor not only to the Mexican-American War but also to the U.S. Civil War (1861-1865). However, the large population of enslaved people in Texas at the time does not explicitly prove that Hispanic, Spanish-speaking Americans did not own enslaved people in Texas, but that readers and publishers of *El Bejareno* in San Antonio were advocates of emancipating enslaved peoples. The relationship between Black and Mexican Americans in *El Bejareno*, from the slave state of Texas, was the most favorable compared to New York, which was a free state and the destination of many runaway enslaved people. One of the first mentions of an enslaved person recorded in *El Bejareno* was entailed in a story labeled “Depredaciones De Indios” (Depredations of Indians):

DEPREDACIONES DE INDIOS.—El Señor W. S. Johnson informa al “Austin Gazette” que cuatro Indios en compañía de un hombre blanco desarmado, atacaron al mayordomo y un negro del Juez Jones, arriba de New Braunfels, sobre el Guadalupe. El mayordomo fué matado y el negro escapó. Una partida salió en persecucion de los barbaros, pero aun no se sabe que suceso tuvo.

Mr. W. S. Johnson informs the “Austin Gazette” that four Indians, in the company of an unarmed white man, attacked the butler and a black man of Judge Jones, above New Braunfels, over Guadalupe. The butler was killed, and the black man escaped. Pursuit of the barbarians was included but it is not known what happened. (*El Bejareno*, 1855) (my translation)

The coverage of Black Americans from *El Bejareno* was nearly exclusively supportive. In contrast, coverage of Native Americans was expressively negative. The usage of the term “barbarian” is an immediate indication that the writers at *El Bejareno* and its intended Spanish-speaking audience were unfavorable toward Native American people and perceived them as beneath other groups of people living in America. This was most likely due to the conflicts and treatment of Native American tribes between Mexican and U.S. in the expansion of both nations in the 19th century who were not recognized as citizens. The coverage of the enslaved person was highlighted as they did not frame the Black man as a runaway slave but as a Black man who barely escaped

with his life against the “barbarians.” Among Mexican American publications, at least in Texas, the only group that was explicitly discriminated against was Native Americans, who were often described as uncivilized and barbaric. In Los Angeles, California, an even more progressive Spanish-language newspaper would come about in the following year after *El Bejareño* from a 17-year-old Mexican American named Francisco Ramirez (Gray, 2006).

Ramirez was involved in the press at the early age of 14 and was greatly invested in exposing the American government’s injustices against Mexican, Chinese, and Black residents of Los Angeles. His newspaper, *El Clamor Público* (The Public Outcry), was created in 1855 (*Chronicling America*, 2007) after he documented a white minority group in Los Angeles that disenfranchised Spanish speakers and non-whites from voting after California became a U.S. state (Martinez, 2012). In *El Clamor Público*, Ramirez documented lynchings and other nationwide injustices that occurred to Black and African Americans. While other races’ and ethnicities’ discrimination battles were recorded and frequently discussed, one case, in particular, stood out to Ramirez and many other Americans in 1857. Dred Scott’s Supreme Court case was reported in *El Clamor Público*. Ramirez, as a political commentator and progressive, felt it imperative to address to his Mexican and Spanish-speaking audience the faults of the U.S. Constitution:

La legislatura de Nueva York ha aprobado una enmienda a la constitucion aboliendo la calificacion de bienes o propiedades que antes se ha exigido a los de color para que puedan votar, y los ha colocado a la misma condicion que los blancos.— Varios miembros demócratas prominentes votaron por la afirmativa en esta cuestion. La legislatura de este Estado y de Massachusetts han nombrado tambien comisiones para que informen sobre las medidas que se deben adoptar para proteger a sus ciudadanos cuando el gobierno federal les niegue la proteccion. Esto es necesario,

pues un gran número de individuos que siempre han sido reconocidos como ciudadanos de los Estados Unidos, y que aun lo son de los Estados mencionados, estan ahora fuera de la ley en las Cortes federales, y no tienen otra proteccion que la de los gobiernos de sus respectivos Estados.”

Constitucionalmente hablando, si no es esto desunion, no sabemos como llamarlo. Apesar de esto Nueva York y Massachusetts permanecen unidos a la Union, no por lo constitucion sino por los vínculos de los grandes intereses. Cuando esos intereses dejen de existir, seguramente no será la constitucion nacional la que mantendrá unidos a los Estados.

The New York legislature has approved an issue to the constitution abolishing the qualification of goods or properties that has previously been required of those of color so that they can vote and has placed them in the same condition as the whites. - Several prominent Democratic members voted in the affirmative on this issue. The legislature of this state and Massachusetts have also appointed commissions to report on the measures that must be taken to protect their citizens when the federal government denies them protection. This is necessary,

because a large number of individuals who have always been recognized as citizens of the United States, and who are still recognized by the aforementioned states, are now out of the law in the Federal Courts, and have no other protection than that of the government of their respective states. Constitutionally speaking, if this is not a disunity, we don't know what to call it. Despite this, New York and Massachusetts remain united to the Union, not because of the constitution but because of the bonds of great interests. When those interests cease to exist, it will surely not be the national constitution that will keep the states united. (*El Clamor Público*, 1857) (my translation)

El Clamor Público intentionally did not highlight the injustice that befell Dred Scott. Ramirez understood that the decision was devastating not only for Dred Scott himself but all enslaved people in America. Ramirez instead chose to highlight the importance of how this decision would impact America—at 21 years of age, only having been an American citizen for less than a decade, he predicted the outbreak of states seceding and potentially the U.S. Civil War. *El Clamor Público* did not attack the Supreme Court Justices who made this decision but faulted the Constitution itself. The effectiveness of attacking the source of injustice rather than the people who decided the case is the remarkable political commentating that was centrally demonstrated in *El Clamor Público*. Ramirez's intended audience, like that of *El Bejareño*, was other like-minded Mexican and Spanish-speaking progressive Americans. Through *El Clamor Público*, Francisco Ramirez explicitly desired to establish a newspaper that openly supported all communities in Los Angeles from the Mexican Spanish-speaking lens. More than any other Spanish-language newspaper in America had done thus far, *El Clamor Público* effectively established and shared interests between Spanish-speaking Americans and other marginalized races and ethnicities.

Conclusion of Findings

From the origin of Spanish-language newspapers in Louisiana, publishers and audiences varied, but much of the publications' content stayed the same. I predicted perceptions of Black and African-American people in these newspapers would differ from those in English-language publications, but I did not expect the drastic differences I encountered between publications in free and slave states. The consistent documentation of emancipating slaves in *El Bejareño* suggests that the abolition sentiment in San Antonio was more intense and vivid than in New York. I can deduce that Mexican Americans were supportive of Black and African Americans in both free and slave states. Even in progressive northern states, Black and African American peoples were not fully accepted, but slavery itself was rejected. The fact that a Spanish-language press in Texas, a slave state, both accepted and promoted emancipation elaborates a specific perspective of the Mexican American press, one that distinguishes a shared sense of discrimination in the 19th century. In future

research, I will continue investigating the extent to which Spanish-speaking Americans supported or opposed slavery and what role they played in both abolitionist and anti-abortionist movements of the 19th century. I also plan to extend my research into the second half of the nineteenth century and investigate the postbellum periods of Reconstruction and Jim Crow in the American South.



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RESEARCH ARTICLES

Secession in Texas: Division Amongst the People

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In early 1861, following the election of Republican Abraham Lincoln, a special Texas convention voted overwhelmingly, 166-8, to secede from the Union. Yet, the decision to secede was more contested than it appears. This research analyzes the ideas of leading secessionists and anti-secessionists who tried to influence the state in making that decision. Methods used to conduct this research were analysis of primary sources such as letters, speeches, newspapers, and documents from events and individuals during secession. Secondary sources that included books, articles, and academic journals about events and specific groups of people in Texas were also analyzed. Results indicate that secessionists in Texas, like most other states, used speeches, letters, clubs, and newspapers to motivate citizens to withdraw from the Union. However, results also revealed that secessionists in Texas also used more unconventional methods. With the Democratic Party in favor of secession and having a stronger presence amongst Texas society, a population of citizens with unequal voting rights, and the spreading of fear through false narratives of possible uprisings from anti-secessionists, the abolishment of slavery, the destruction of states' rights, and desegregation instilled fear in White Texans and caused many to feel resentment towards the already harassed anti-secessionists. For this reason, this study concludes the division amongst political parties, the inequalities between White Texans and minority groups and the scare tactics employed by secessionists, which included the narratives above, is what ultimately influenced voters to opt for the secession of Texas.

Introduction

History tends to repeat itself. When studying history, there is an idea that we learn from our mistakes. In America today, we see divisions between people based upon religion, values, and political ideologies. The time we faced the most division in our nation, however, was during the American Civil War where the southern states seceded from the Union based on the fear of losing their way of life. With Abraham Lincoln winning the 1860 presidential election, many of the Deep South states decided to secede out of the fear of slavery being abolished and a strong Republican-controlled central government. The last of the Deep South states to decide was Texas, ultimately voting to separate during the Texas Secession Convention of 1861 held in Austin. Although the decision was made through an almost unanimous vote of 166-8 in favor of secession, it is important to understand the context of Texas' decision to secede. During the 1850s, Texas was influenced by the Democratic and Whig Parties that attempted to have a strong influence on Texas's society. The difference between both parties was that the Democrats wanted to expand slavery, while the Whigs mostly wanted political stability and economic growth. Additionally, Texas's population was made up of Whites, Blacks, Tejanos, Germans, and Native Americans; all of whom did not share equal rights including the right to vote. Although Texas ultimately determined to

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secede with a seemingly overwhelming vote, we wonder how united the people of Texas were in the decision to secede? This study examines the true level of contestation surrounding this decision, delving into the factors previously listed and giving careful consideration to the influence exerted by secessionists.

Background

In Texas, secessionists included Anglo, German, and Tejano citizens who either had public or personal reasons of why they wanted to secede. The most common reason and the reason that most scholars have stated was the issue of slavery. *The Daily Ledger and Texan* (1860) claimed that Abraham Lincoln was the “one idea of hostility to American slavery” and was leading abolitionists and the Black Republicans to wage “an unjust and unrelenting warfare against the institutions of the South.” The reason why some Anglo Texans, along with some Tejanos, wanted to protect slavery was because it was believed to be a civil right. According to the “Impending Crisis” (1860), written by Oran M. Roberts, slavery was a right stated by the Constitution that needed to be defended. Roberts also implied that slavery is part of “our social organization. Our industrial pursuits are largely based upon it.” Slavery was also seen as “beneficial to both races, the white and black” and that “Its tendency is to prevent the conflict between capital and labor.” In “Impending Crisis,” Roberts speaks the language that Texans wanted to hear, justifying slavery and its purpose in Texas.

Besides citizens wanting to maintain slavery in Texas, many secessionists advocated for states’ rights that also pushed Texas’s decision to secede. Secessionists believed that state governments should be the power that decides what is considered to be a ‘right’ for the people. They believed that Texas “is for herself the sole Judge” that gave Texas the power to make decisions for the people (*The Weekly Ledger and Texan*, 1860). With Abraham Lincoln being elected president in 1860, there was a notion that the federal government was going to invade the South and take away the rights of citizens. The same was said when Texans believed that the federal government was going to take everything that was “valuable to freemen” (Roberts, 1860). According to Oran M. Roberts, state governments had the ability to alter themselves the best way possible to ensure they have the capabilities to protect its citizens even if that meant leaving the Union; but, if the “Federal government should refuse to recognize the right of the State to exercise its reserved right of changing its form of government,” then states have the right to “be united in repelling the invasion.” For secessionists, the federal government was too weak to protect citizens’ rights and uphold the Constitution including failing to “protect the lives and property of the people of Texas against the Indian savages on our borders” (Roberts, 1860). This made Texans lose faith in the Union and pushed them even further towards secession due to the federal government not being able to protect citizens’ rights, the frontier, and uphold the Constitution.

Current Study

The most common claim when it comes to teaching about the Civil War, in this case, about secession, is that the southern states all agreed to leave the Union to protect their way of life. However, as this paper will demonstrate, that is not entirely true. In order to refute this claim, this study examined primary sources such as letters, speeches, newspapers, and documents from events and individuals during secession. Secondary sources were also analyzed that included books, articles, and academic journals about events and specific groups of people in Texas. Not all Texans supported secession, which caused so much division amongst secessionists and non-secessionists. The politics of secession, dedication to maintaining slavery, and the fear of violence sweeping the territory clashed with the views of minority groups who were in fear of persecution. With the many different areas that historians have researched about the Civil War, secession in Texas has been one that many people have not explored. The purpose of this research is to correct the false but widespread impression that everyone in Texas sided with secession. The current research is of utmost importance because it examines the lives of the people in Texas during the country's darkest times. It includes how all the factors of fear, discrimination, and political differences fueled the state's decision to secede.

Political Division

Even though secession in Texas did not occur until January of 1861, the first signs emerged during the 1850s with the passage of the Kansas-Nebraska Act in 1854. Before this act, the U.S. lived by the Missouri Compromise of 1820 that restricted the "extension of slavery in the Louisiana Territory above the 36° 30' line" (Howell, 2006, p. 469). However, the signing of the Kansas-Nebraska Act allowed for the expansion of slavery into two newly formed territories. Not only did this magnify the tension between the Democratic and Whig Party, but it also initiated a public discussion regarding secession in Texas.

While both the Whigs and the Democrats supported the protection of slavery, the Democratic Party was the main supporter of secession. Formed in the 1830s during the Jacksonian Era, the Whig Party followed the "conservative Whig ideology that called for political stability and economic growth." James W. Throckmorton and the Whig Party believed in a strong central government that could protect the rights of citizens and, therefore, opposed Democrat sentiments of secession due to their loyalty to the Union. With the Democratic Party being one of the most powerful political parties and being particularly influential on the people of Texas, their differences in ideals led to the dismantlement of the Texas Whigs and their becoming "the first victims of the sectional debates" over the signing of the Kansas-Nebraska Act (Howell, 2006, pp. 468–469).

The opposing views amongst the Whigs and the Democrats became the first sign of the future split between Unionists and Secessionists. Then Democratic Senator Sam Houston stated that "no event of the future is more visible to my perception than that, if the Missouri Compromise is repealed, at some future day the South will be over-whelmed" (Howell, 2006, p. 471). Houston's

sentiments, however, were opposed by the rest of the Texas Democrats who described his vote against the Kansas-Nebraska Act as “an act of treason to the state he represents and to the South.” They even went further by claiming that Houston deserted his friends and “sold himself to the freesoilers and abolitionists of the North” (*State Gazette*, 1855–1860). These claims can be seen as the steppingstone of Houston’s popularity declining due to the Texas Democratic Party shifting from a nationalist party to a sectional party.

After the collapse of the Whig Party in 1854, men such as James W. Throckmorton and Sam Houston reorganized in Texas as the Know-Nothing Party. Whereas the Know-Nothings in the eastern United States were best known for their anti-immigrant stances, in Texas, the Know-Nothing Party was made up of Unionists and former Whig members who were often united only in their opposition to the Democrats. Democrats, for their part, berated the Know-Nothings as traitors to the Constitution and the South. Newspapers such as *The State Gazette* (1855–1860) claimed that the Democrats “alone remain true to the Constitution and necessarily true to democracy” and that the Know-Nothings “elected only such men as are the avowed enemies of the South.”

Both parties had their ways of upholding the Constitution and representing democracy. During the secession discussion, the Democrats became more radical that led the Know-Nothing Party to counter their agenda. The Know Nothings task was to uphold and promote mainstream American political values; thus, could be seen as the anti-radical Democratic Party. Eventually, Throckmorton decided to join the Democratic Party in hoping to shift its views on secession. Throughout the late 1850s, Throckmorton and the Know-Nothings battled for political influence in Texas by focusing on gubernatorial elections, which led to Sam Houston’s victory in 1859. While these individuals were seeing some progress, everything changed in October of 1859 and the summer of 1860.

With fear spreading throughout Texas, tensions started to rise that helped push secession forward. In November of 1860, Abraham Lincoln was elected president of the United States which would elevate the Republican Party to control the White House. Many citizens in Texas viewed Lincoln and his party as the ‘Black Republicans’ and the greatest threat to Southern life due to their opposition to federal support for slavery. After the election of Abraham Lincoln and the secession of other Deep South states, secessionists in Texas clamored loudly for a convention to decide the fate of the Union in the state. Despite the delaying tactics by Gov. Sam Houston, in January 1861, secessionists, led by Oran M. Roberts, who was a member of the Texas Supreme Court, Texas called for representatives for a secession convention in Austin, which would decide the fate of Texas and its future in America. On February 1st, 1861, the votes were in and secession won the majority with 166-8 votes in favor.

Anti-Secessionists' Sentiments

Anti-secessionists opposed separation from the Union mostly due to their views against slavery, the fear of a defenseless frontier and a fear that secession would affect Texas's economic advancement. Opposing slavery was one of the most common opinions amongst some of the White Texans, Germans, and Tejanos who believed slavery was an evil deed against African Americans. Anti-secessionists would show their support for the Republican Party and advocate for Texas to remain in the Union. This would help Texas abolish slavery, countering the secessionists' goal to maintain slavery. With slavery being a statewide issue, the Texas frontier had more pressing issues. Throughout the Texas frontier, Native American tribes such as the Comanches and Apaches lived on the outskirts of the frontier and were a major threat to the citizens of Texas inhabiting the area. Due to the fear of Native American attacks, the federal army occupied a series of forts in west Texas to fight off the natives. Once word came out that secession was imminent, citizens along the frontier were terrified that the frontier would be exposed and that Native Americans could see an opportunity to raid homes and kill civilians. This fear became a reality once Texas seceded, and multiple raids occurred. Raid descriptions explained that natives were there "to pillage and burn the white man's homesteads, killing him, scalping his children, roping and dragging his women." These raids took place after the federal army abandoned their forts, giving the Comanche and Apache tribes a chance to bring destruction. Throughout the war, the "Settlers who survived the raids implored the government to do something, anything, to help them" (Oates, 1963, p. 182). Comanche and Apache raids became increasingly brutal, and residents of west Texas demanded to have soldiers on the frontier; thus, becoming one of the major issues in Confederate Texas.

A factor that would help Texas grow as a state is a strong economy. Texas seceding would lead to the dissolution of economic prosperity in the state. This became a fear amongst anti-secessionists since Texas would not prosper with an economy outside the Union. The individual who shined a light on this fear was James W. Throckmorton, who was one of the main members of the Texas Secession Convention who opposed secession. Originally from Tennessee, Throckmorton moved to Texas as a young boy until the death of his father in 1843. He left Texas, studied medicine, and moved back to Texas to fight in the Mexican War. After practicing medicine for some time, he switched to politics and became very popular amongst the people of North Texas. Along with opposing secession for the sake of protecting the frontier, Throckmorton also believed in the economic prosperity of North Texas. He believed that railroad development would help North Texas grow economically and remaining in the Union would help accomplish that goal. Due to the opposing values between the Whig Party and the Democratic Party, Throckmorton's vision for North Texas was overshadowed by the views of the secessionists that made it "increasingly difficult to concentrate his efforts on these political issues" (Howell, 2006, p. 467). During the secession crisis, anti-

secessionists started to believe that withdrawing from the Union would lead to “Bankruptcy and ruin... ready to spread war, famine and pestilence in our midst” (*Tri-Weekly Alamo Express*, 1861). This could be seen as the eye-opener to Throckmorton’s point on Texas needing to achieve economic growth in the Union. With the struggle of gaining influence in Texas, the abolishment of slavery, a defensive frontier, and the economic prosperity of Texas became the core values amongst anti-secessionists.

Silenced Voices

In the 1850s, Texas had a population consisting primarily of Whites, Blacks, Tejanos and Germans. Unlike Blacks who were not considered citizens and did not have any rights, Tejanos and Germans did. Nevertheless, they did not share equal voting rights in certain parts of Texas due to their heritage and country of origin.

Tejanos mostly inhabited lower Texas and faced many challenges after the Texas Revolution. After the Republic of Texas was formed in 1836, many of the Tejanos that lived in Texas had to alter their lifestyles to fit in with American legislation. Tejanos during the secession crisis had multiple reasons for why they should or should not support the South. For those who were anti-secession, Tejanos were worried “incessantly about Lipan Apache and Comanche Indian raids” and the prejudices that some Confederates had about those at home. Many of the Confederates before and during the war treated Tejanos unjustly by the legacy Tejanos had after the Texas Revolution and an unlawful justice system that failed to help assault victims. Tejanos such as Capt. José Ángel of the Confederacy and the son of José Navarro fled to Mexico during the war due to military officials treating them with disrespect and paying them with horror in the army. Navarro recalls “that I left because the military authorities in San Antonio treated me unjustly” (Thompson & Mata, 2016, p. 156). There were Tejanos that chose to stand with the secessionists for multiple reasons. There were some Tejanos, according to Deborah M. Liles and Angela Boswell, who had “strong economic and political ties to powerful political patrons who in turn were closely associated with secessionists in Austin.” This raised the social standing of Tejanos, which eventually led to some gaining respect from the Anglo community. Other Tejanos joined the army for the sake of “being intoxicated by Southern pride,” while others believed that it would lead them to “improve their way of life, to receive a sizeable enlistment bounty, and to escape a dreary and demeaning future of indentured servitude” (Thompson & Mata, 2016, pp. 158–159). Tejanos in Texas chose the path they believed was right; there were those who chose the side of secession and didn’t face any setbacks. The Tejanos against withdrawing from the Union were silenced by secessionists, making their beliefs having no value.

The Germans were known to be one of the main minority groups that had different opinions when it came to this matter. Many Germans were in favor of secession having left their home country to escape the powerful government that tainted their right to economic, political, and religious opportunities. The

notion of the Union coming to Texas to take away their rights was seen as preposterous to some Germans. This led them to stand with the secessionists in wanting to fulfill Texas's right as a state government. Even though many Germans were against slavery, they believed that "abolition must be left to the several states in which it exists." The Union was seen as too powerful to some Germans, and they saw the resemblance of their aristocratic government that made them "suspicious of a strong federal US government" (Dykes-Hoffman et al., 2016, pp. 186–187).

In line with other anti-secessionists, many Germans were against secession because they believed that slavery was unjust and wanted a strong frontier defense. Having a protected frontier was one of the most common viewpoints on why Texas should not secede, especially when most Germans were surrounded by Comanches. Most Germans believed that slavery was evil and that it needed to be stopped. German Texans held a Texas States Convention of Germans in 1854 that had "strong resolutions passed against slavery" (Dykes-Hoffman et al., 2016, p. 184). This convention was remembered by others and eventually led to violent crimes against Germans who were against slavery. Other Germans did not want to secede because they were afraid of retaliation if they did not "take an oath of allegiance to Texas and the Confederate States of America" (Dykes-Hoffman et al., 2016, p. 185). If they did not take an oath, it would result in violence pertaining to a rope and a tree. The German and Tejano citizens would struggle to have their beliefs represented in the secession discussion, continuing to leave their views unheard.

Fear Tactics

Fires and the Abolitionist Conspiracy of 1860

In October of 1859, an abolitionist named John Brown raided Harper's Ferry in Virginia with the goal of liberating the nearby slave population. This brought fear amongst the white citizens of Texas and raised the sentiment that "abolitionists were making plans to kill white Southerners and free the South's slave population" (Howell, 2006, pp. 482–483). Later in the summer of 1860, small fires were started in Denton's town square, Dallas, and Pilot Point that led many Anglo Texans to conclude that a grand abolitionist conspiracy was behind what appeared to be a series of arson attacks. The supposed abolitionist conspiracy was soon backed up by newspaper reports all over Texas. *The San Antonio Ledger and Texan* released a piece on August 4, 1860, explaining a conspiracy to harm the town of Waxahachie. A merchant wrote a letter to a correspondent in Houston claiming that there was a "conspiracy there to murder the people and destroy the town in a manner similar to that of Dallas." The conspiracy went even further when the merchant asserted that enslaved people were involved, and like in Dallas, Ellis, Tarrant, and Denton counties, their plans had been "to burn the houses and murder the women." Newspapers routinely asserted that enslaved people were being aided by abolitionists and that the attacks were all planned out.

A newspaper in Austin called *The State Gazette* also published a piece on October 6, 1860, informing their readers about the “Texas Conspiracy.” The paper claimed that the rumors of an uprising in Texas were true and that white men were “extending its ramification into all the Slave-holding parts of the State.” The paper also added on that it was “a simultaneous and general insurrection of the blacks, accompanied by fire, rape, and assassination.” These conspiracies put Anglo Texans, who were terrified that such a conspiracy could have been hatched on their doorstep, on high alert. The newspapers used a great deal of words that described the heinous crimes that abolitionists were committing or going to commit. These claims were used as a tool to have Texans think a certain way about those who were anti-secession, classifying them as murderous abolitionists.

Due to these conspiracies, many Texans took the side of the secessionists and failed to investigate the truth behind these fires. In *Texas Terror: The Slave Insurrection Panic of 1860 and the Secession of the Lower South*, Donald E. Reynolds (2007) contends that the fires were caused by “phosphorous matches that were stored incorrectly in the excessive heat” (p. 477). Even though initial reports about the fires backed up Reynolds’s claim about the fires, Democrats at the time stuck with the notion that abolitionists were invading Texas and liberating slaves. This brought more people towards the decision of seceding from the Union. These assumptions motivated secessionists to create vigilante groups to scare and hunt down Unionists and anti-secessionists throughout Texas.

Vigilante Groups

In the middle of the secession discussion, secessionists went to work in pushing Texas citizens towards their direction of thinking. James Marten mentioned in *Texas Divided: Loyalty and Dissent in the Lone Star State* (2015), secessionists during the 1850s resulted in forming vigilante mobs to attack those who were in opposition to secession. After a series of attacks and deaths, secessionists continued to push their message forwards. Families had to move out of Texas due to secessionists telling mobs that if they do not leave, they will be hung. Secessionists even stated that anti-secessionists “were guilty of no crime but voting for Lincoln” (Davidson, 1861). Most of these individuals were killed or scared away just because some of them voted for Lincoln. Lincoln was seen as the villain in the South and the terror he was going to bring was the abolishment of slavery. His voters would help him accomplish that; thus, making anti-secessionists Texas’s enemy. After the Secession Convention, secessionists went even further by putting out death warrants for those who opposed the committee’s decision. The warrant stated that any who “oppose any resolution or ordinance of the Convention” and any who “give aid or comfort to the enemies of this state... shall be guilty of Treason... thereof shall suffer death” (*The Alamo Express*, 1861). With this being stated, secessionists showed their true intentions amongst those who did not support secession.

As mentioned above, the summer of 1860 was the turning point in the discussion of secession. The fires during the summer of 1860 brought Texans to the conclusion that abolitionists were the ones responsible. This resulted in vigilante groups being formed around Texas, torturing and chasing out those who were deemed responsible for the fires. Vigilance groups targeted “northerners, free blacks, travellers [sic] and preachers” that resulted in lynchings and scare tactics to push them out. Secessionists used fear and propaganda to push their agenda and to change the minds of citizens (Reynolds, 2007, pp. 477–478). Even though initial reports claimed it was a few matches that were ignited by the Texas heat, average citizens were terrified that abolitionists were coming to invade Texas and wreak havoc. Due to the fear of invaders coming in and harming Texans, citizens began to side with secessionists that helped push their agenda even further into creating the Texas Secession Convention in 1861.

Conclusion

Texas has faced many challenges throughout its history. The biggest challenge of them all was to unite their people during the secession crisis. The state was divided amongst the secessionists and the anti-secessionists, and both groups fought for a future that would be best suited for Texas. Both sides used letters, speeches, newspapers, and documents to push their agenda as they had different views on the matter. Ultimately, secessionists succeeded to withdraw from the Union with a 166-8 vote in February of 1861 using the division amongst political parties to their benefit, taking advantage of the inequalities between White Texans and minority groups, and using fear tactics to subdue their opponents. For future research, this topic can expand more with the analysis of primary sources from individuals that impacted Texas and the secession discussion.

Acknowledgements

After conducting this research, I would like to give thanks to the McNair Scholars Program at St. Edward’s University for giving me the opportunity to pursue a topic I was passionate about. Along with the program, I would also like to thank my mentor Dr. Daniel P. Glenn who has guided me throughout this research and mentored me through the field of history. Lastly, if it was not for my family supporting my academic journey, I would not be here pursuing my degree through history. These great sets of individuals have guided me on the right path and will continue to do so in the incoming years. Once again, thank you.



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REFLECTIONS

Reflection: Becoming a Resilient Scientist

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Before my 2022 McNair summer research internship, I could not have imagined myself successfully attending an international neuroscience conference, presenting my research five times, and transforming into a science outreach ambassador within three months. Not long before pursuing these opportunities, I changed my major from Business Administration to Psychology with a Neuroscience minor. Joining Dr. Ana Clara Bobadilla's lab at the University of Wyoming (USA) captured my interest in neurobiology and presented career paths to me that I had never considered. Ultimately, my fruitful McNair research experience was the result of unwavering resilience and support that will guide my future endeavors.

Alongside my degree coursework and the required McNair workshops, I conducted neurobiological research on drug-reward circuitry. Specifically, I aimed to characterize the morphology of neuron populations linked to mouse cocaine-seeking behavior. Previous research in rodents suggests that neuronal protrusions, called spines, are implicated in synaptic strength and increased quantity upon drug-conditioned cue presentation (Bobadilla et al., 2017; Gipson et al., 2013, 2014; Roberts-Wolfe et al., 2018). Thus, I hypothesized that an increased number of spines would be present within a cocaine-seeking population compared to a non-seeking and general population. The first month of my research involved consistently running a self-administration and relapse model mouse behavioral assay for two hours daily. I spent the remainder of my summer staining tissue, acquiring confocal images, and analyzing over 70 dendritic segments. This work culminated in my first research presentation at the McNair Symposium 2022 at the University of Wyoming.

However, before presenting, I was inundated with extreme self-doubt and anxiety that had been familiar to me since high school; I was experiencing imposter syndrome. I have harbored negative beliefs about my ability to succeed as a first-generation student and woman in science. Coming from an impoverished and rural background fostered a sense of isolation from the prestige and wealth historically associated with academia. Additionally, challenging experiences in my youth rendered my self-esteem insignificant. At times, imposter syndrome has caused me to question my place in science, my intelligence compared to my peers, my relatability to family, as well as the adequacy of my work.

^a Faculty Mentor: Ana Clara Bobadilla, Ph.D.

Amidst my hectic summer of research, I began countering my imposter fears by building and embracing my support network. I learned skills in Cognitive and Dialectical Behavioral Therapy that upregulate my adaptability, such as emotion regulation and mindfulness. I embraced turning to my mentors, mental health counselors, peers, friends, and family for assistance. My first presentation and subsequent completion of my McNair summer internship were merely the first of many results from these lessons. I have since presented my ongoing research nationally and internationally, participated in over 20 hours of science outreach, and observed substantial growth in my self-esteem. Most exciting, after receiving numerous rejections to Ph.D. programs, I was accepted into the Biomedical Sciences Ph.D. program at the Medical University of South Carolina. While I may continue to experience imposter fears, my undergraduate research experience has endowed me with the resilience and support necessary to achieve my ambitions as a first-generation woman scientist.



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REFLECTIONS

Reflections and Consejos for Thriving in Research From a First-Gen Chicana Scholar

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As a first-generation Chicana scholar, I had to define what thriving in research meant for me, and the McNair program helped me to accomplish this task. As I worked on my McNair research that illuminated the dynamic between mothers' modeling academic behavior as they pursued their educational goals and children's learning of navigational skills for academic success, I developed skills in preparing a literature review, designing a survey study, recruiting participants, conducting statistical analyses, and presenting research. Throughout this experience, I realized the importance of reading the relevant studies that have come before me to ensure that I was going into my study with the knowledge necessary to push the boundaries of past research. I discovered the significance of making connections with the community not only for recruitment but also to get a glimpse into the parts of their lived experience that previous research has overlooked. Lastly, I acknowledged that transparency when writing about the data analysis and results is vital to avoid misleading other researchers and the community being impacted by the work. My research process and the best practices I utilized along the way solidified my beliefs in my abilities to be a researcher who can make positive change for underserved communities, but the lessons I learned in McNair were what allowed me to thrive.

One lesson was how necessary it is to separate yourself from the work and rest unapologetically. I learned this lesson the hard way through the burnout I experienced from prioritizing work over self-care, a habit I developed from watching my family work long, hard hours every day in order to survive. I now take seriously the vital role of rest in sustaining myself to create better quality research. Another lesson was how important support from others is in the research process. I started my independent research in McNair under the impression that it was to be done "independently," but I quickly learned that I could lean on and needed my community for support. McNair provided the community I needed to overcome many of the challenges I faced as a Chicana scholar, such as through providing emotional and validating support when I felt that academia could break me.

Below are consejos that I want to share with other scholars who are in similar positions as I was.

a Faculty Mentor: Alison Bailey, Ph.D

For those who are exhausted: Rest is just as essential as your moments of productivity. Take my great-abuelita's consejo: "first you, later everything else."

For those who are overwhelmed: Take it one part of a task at a time. As the old adage goes, "Rome wasn't built in a day." The same goes for your research!

For those experiencing imposter syndrome: You are in the position you are in because you earned that space. This space feels difficult because you have reached this advanced level. Because of all you have overcome to get here, you can handle the challenges of this space. The power is all in you.



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