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FOREWORD

Thank you for taking the time to review our journal, *CI Currents*. This undergraduate research journal has been a passion project of ours, and we are honored to have released this inaugural edition. Each of the works contained within the issue is a time capsule for us here at *CI Currents*, for the talented authors who submitted them and for anyone who wants to take a deeper look into some of the outstanding research coming out of CSU Channel Islands.

We believe that an undergraduate research journal is important because it provides students with a real sense of audience and a tangible platform where they can share their undergraduate research so it can be accessed and acknowledged by a larger student body. It is our hope that publishing in *CI Currents* has been a valuable experience for our student authors, and that the contents of their projects can meet the curiosity and high expectations of our readers. We anticipate that CSUCI will see potential in the importance of undergraduate research journals such as *CI Currents* so that these public platforms can continue to empower students throughout their academic journey.

Through becoming peer editors for *CI Currents Undergraduate Research Journal*, we have gained a myriad of different skill sets that have prepared us for future leadership roles. These skills include the ability to explore editorial work, help other students improve their written research, and gain confidence to design the layout of our journal. The ability to communicate with different faculty members on workflow and deadlines has deeply personalized our academic experiences at CSUCI.

—**Marshall Mee and Mabel Pyle**
Undergraduate Peer Editors 2024-2025
April 17, 2025

Analyzing Children’s Picture Books for Themes of Justice, Equity, Diversity, and Inclusion (JEDI)

Ana Maria Hernandez, Anna Sanchez, Jennifer Lopez, Lizbeth Bello-Torres,
Vivian Smith, & Aura Pérez-González

Summer Undergraduate Research Fellow (SURF) Project, 2024

¹California State University Channel Islands, Camarillo, California


Instructor’s Introduction

The purpose of this qualitative research study assisted by students in the Summer Undergraduate Research Fellow (SURF) program was to analyze past Pura Belpré Award-winning children’s picture books (from 2013 to 2023) and examine whether they addressed issues pertaining to justice, equity, diversity, and inclusion (JEDI). Our findings revealed the scarcity of justice, equity, diversity, and inclusion issues addressed in Pura Belpré Award-winning children’s picture books, despite the need for more books that discuss JEDI related content (Braden & Rodriguez, 2016). The majority of the JEDI issues addressed in the award-winning children’s picture books centered around issues of education, language, and immigration. There is, thus, a need to also diversify the JEDI issues addressed in such picture books. Moreover, though some of the justice issues addressed were explicitly explained and could easily be understood by young children, others were more implicit and would require adults to support young children to understand the JEDI issues addressed. The significance of these findings has deep implications for teacher educators, teacher education programs, and the field of early childhood education at large. There is a need to support future and current early educators on how to select children’s picture books that lend themselves to conversations around justice, equity, diversity, and inclusion (JEDI) within young children.

- Aura Pérez-González, Assistant Professor of Education-Early Childhood Studies, October 2024.


Children’s picture books are often misconstrued by early educators to be neutral and apolitical curriculum choices that are only meant to support young children to read, write, speak, and listen. Literacy is often misunderstood to mean only reading and writing; however, literacy can mean reading words and reading worlds. Research suggests that books, in spite of their academic stature, can leave a lasting impression on young children because they are beginning to learn and form opinions about themselves, people unlike themselves, and their environment. Therefore, this study emphasizes the importance of reading literature to children that includes and emphasizes justice, equity, diversity and inclusion. Undergraduate researchers were involved in a qualitative research study that entailed a content analysis of past Pura Belpré Award-winning children’s picture books for themes pertaining to justice, equity, diversity, and inclusion (JEDI). The Pura Belpré Award is granted to outstanding works of literature for children and young adults that best portray, affirm, and celebrate the Latino cultural experience. We found that although many books catered to children to promote culture and common experiences between the Latino community, many lack visual representation of how Latinos can look, thus promoting

a stereotype. We also discovered that there is a lack of inclusion in children's books. For example, there is a lack of representation in physical appearances, physical disabilities, mental disabilities, skin tone diversity, and more. To offer children a truly inclusive perspective of culture, we learned it is important for educators to actively address the culture and diversity gap and include justice, equity, diversity and inclusion in their literacy curriculum.



Analyzing Children's Picture Books for Themes of Justice, Equity, Diversity, and Inclusion (JEDI)

Ana Maria Hernandez, Anna Sanchez, Jennifer Lopez, Lizbeth Bello-Torres, Vivian Smith
Faculty Mentor: Dr. Aura Pérez-González










Purpose

Ladson-Billings (1992) once argued, "the literacy message in the United States is decidedly apolitical while at the same time advancing a political agenda that helps maintain the status quo" (p. 381). Accordingly, children's picture books are often misconstrued by early educators to be neutral and apolitical curriculum choices that are meant to only support young children to read, write, speak, and listen. Literacy is often misunderstood to mean only reading and writing symbols; however, literacy can mean reading words and reading worlds (Freire & Macedo, 1987; Souto-Manning, & Yoon, 2018). As Ladson-Billings asserted, there is no such thing as literary neutrality. All books can leave a lasting impression on young children because they are beginning to learn and form opinions about themselves, people unlike themselves, and about societal themes pertaining to justice, equity, diversity, and inclusion (JEDI) (Adichie, 2009; Tschida, Ryan, & Tidnor, 2014; Spencer, 2022).

The purpose of this qualitative research study was to analyze past Pura Belpré Award winning children's picture books (from 2013 to 2023) and whether they address issues pertaining to justice, equity, diversity, and inclusion (JEDI). The Pura Belpré award is a highly prestigious award granted to outstanding works of literature for children and young adults that best portray, affirm, and celebrate the Latino cultural experience. A content analysis of the past Pura Belpré Award winning children's picture books (from 1996 to 2023) was conducted to examine the children's picture books for themes pertaining to JEDI.

Methodology

The methodology we utilized included a critical content analysis (Johnson et al., 2016) of eleven Latinx children's books chosen for their reception of the annual Pura Belpré Award. Specifically, we examined children's picture books that received the Pura Belpré award or honor for narration or illustration. Moreover, we chose to analyze children's picture books that were appropriate for early childhood and children ages 0-8, beginning with the most recent Pura Belpré award until the present (2014-2024). The criterion of the accolade indicates that a Latinx writer and illustrator best portrayed, affirmed, and celebrated the Latino cultural experience in a work of literature for children and youth (Association for Library Service to Children, 2024).

Children's Picture Book / Author & Illustrator	Book Cover Image
<i>Planting Stories: The Life of Librarian and Storyteller Pura Belpré</i> by Anika Aldamuy Denise and illustrated by Paola Escobar	
<i>Mango, Abuela, and Me</i> by Meg Medina and illustrated by Angela Dominguez	
<i>La Princesa and the Pea</i> by Susan Middleton Eya and illustrated by Juana Martinez-Neal	
<i>Juana & Lucas</i> written and illustrated by Juana Medina	
<i>Dreamers</i> written and illustrated by Yuyi Morales	
<i>Pincho Rabbit and the Coyote: A Migrant's Tale</i> written and illustrated by Duncan Tonahut	
<i>Separate Is Never Equal: Sylvia Mendez & Her Family's Fight for Desegregation</i> written and illustrated by Duncan Tonahut	


Our research team analyzed and coded the literature using a set matrix of prompts that reflected justice, equity, diversity, and inclusion, as defined by the group at the beginning of our research study. Each component in the matrix was then further scrutinized for multicultural-pedagogical intention (Martinez-Roldán, 2016) embedded within each book's use of illustration, storyline, and relationships between people, litestyles, effects on children's self and social identities (Boelho & Rudman, 2009), children and adults engaging in actions for change, authentic Latinx details (Braden & Rodriguez, 2016), and loaded words. Our collective analysis also created annotations for the author's or illustrator's background and perspective, copyright dates, and overall appeal to children.

Preliminary Findings

- Justice**
 - 42% of books addressed issues of justice
 - Justice issues addressed explicitly: (1) access to equitable education (2) inclusion of books in Spanish
 - Justice issues addressed implicitly: (1) rights of immigrants
- Equity**
 - 42% of books addressed issues of equity
 - Inequities intertwined w/ issues of justice and inclusion
 - Linguistic inequity - All books on Pura Belpré award list written in English w/sporadic Spanish
- Diversity**
 - 71% of books addressed issues of diversity through illustrations (characters w/ diverse skin tones)
 - 57% of books set in the U.S.
- Inclusion**
 - 28% of books addressed issues of inclusion
 - Inclusion issues addressed explicitly: (1) educational inclusion, (2) linguistic inclusion
 - Inclusion intertwined w/issues of justice and equity

Theoretical Framework

A Latcrit theoretical framework (Solorzano & Bernal, 2001; Solorzano & Yosso, 2002) was employed to examine how Latinx are represented in children's books that were awarded the Pura Belpré award. The Pura Belpré award is given to children's picture books that best portray, affirm, and celebrate the Latinx experience as well as are written or illustrated by a Latinx person. Using a LatCrit theoretical framework allowed for an analysis of race/racism, challenging dominant ideology, commitment to social justice, experiential knowledge, and interdisciplinary perspectives found in the Pura Belpré award winning children's picture books and their relationship to themes of justice, equity, diversity, and inclusion.




Research Questions


The following research questions guided this study:

1. Do Pura Belpré award winning children's picture books address issues of justice? If so, what?
2. Do Pura Belpré award winning children's picture books address issues of equity? If so, what?
3. Do Pura Belpré award winning children's picture books address issues of diversity? If so, what?
4. Do Pura Belpré award winning children's picture books address issues of inclusion? If so, what?

Discussion

Our preliminary findings reveal the scarcity of justice, equity, diversity, and inclusion issues addressed in Pura Belpré award winning children's picture books, despite the need for more such books (Braden & Rodriguez, 2016). The majority of the JEDI issues addressed in the award winning children's picture books centered around issues of education, language, and immigration. Thus, there is a need to also diversify the JEDI issues addressed in such picture books. Moreover, though some of the justice issues addressed were explicitly explained and could be easily understood by young children, others were more implicit and would require adults supporting young children in understanding the JEDI issues addressed.





Examining the Cannabis Clinicians' Role in Cannabinoid Therapy

Marshall Mee,¹ Jenna Jimenez,¹ Thomas Clobes¹ & Jesus Maldonado¹

Summer Undergraduate Research Fellow (SURF) Project, 2024

¹California State University Channel Islands, Camarillo, California

Instructor's Introduction:

All three of the student research assistants participated with the data analysis, particularly Jenna. All three worked together to prepare the poster and presentation. This was conducted during the Summer of 2024.

- Thomas Clobes, Assistant Professor of Health Sciences, October 2024.

Cannabis as a therapeutic agent is accessible to a growing number of people, though research suggests that many medical cannabis users undertake their cannabinoid therapy independent of medical guidance. However, the effects of medical guidance on outcomes of cannabinoid therapy are unknown. Through an online survey, medical cannabis users reported their cannabis usage patterns, outcomes, and collaboration with medical professionals. A secondary analysis of the responses from medical cannabis users was analyzed with a variety of statistical tests to search for differences in medical guidance, usage patterns, and health outcomes between those with medical guidance and those without (n=988). Those who worked with a cannabis clinician reported statistically significant greater efficacy ($p < .001$) as well as higher daily doses of CBD ($p < .001$). Additionally, those working with a cannabis clinician reported more statistically significant benefits to their physical ($p < .001$) and mental health ($p < .001$) and were more likely to seek advice from dispensary staff ($p < .001$). Undergraduate researchers in this study attempted to evaluate the role of medical guidance for those undertaking cannabinoid therapy. The results indicate that undertaking cannabinoid therapy with guidance from a cannabis clinician can lead to better outcomes.

Keywords: *example, graduate student, laboratory management, laboratory safety, leadership development*

Examining the Cannabis Clinicians' Role in Cannabinoid Therapy



Marshall M. Mee, Jenna M. Jimenez, Jesus Maldonado, & Thomas A. Clobes



Background

As the legal landscape of medicinal and recreational cannabis has evolved in the United States, both academics and consumers have increasingly desired to gain an understanding of the efficacy of cannabinoid therapies.¹ Extensive evidence exists demonstrating a lack of medical professional involvement in many individuals' cannabinoid therapies,^{2,3} but little research has been conducted evaluating how this affects patients' health outcomes. It is essential to understand how therapeutic usage patterns and health outcomes can vary depending upon the presence or absence of a cannabis clinician. This study attempts to evaluate the outcomes of medical guidance for those undertaking cannabinoid therapy.

Hypothesis: Medical cannabis patients who collaborate with a cannabis clinician will have better health outcomes, lower THC doses, and higher CBD doses.

Methods

This was a secondary analysis of survey data collected from current and past medical cannabis users. Medical cannabis users were self-identified and defined as those who currently or previously used cannabis to treat or aid with some sort of medical issue, whether or not with a recommendation or supervision from a medical provider. The specific variables analyzed were efficacy, daily THC & CBD dose, impact to physical and mental health, and advice sought from dispensary staff. Continuous variables were analyzed using an independent sample t-test or Mann-Whitney U test as appropriate. Data was collected anonymously to protect the confidentiality appropriate of the participants. This project was reviewed and approved by the institutional review board at California State University Channel Islands (approval IO5662).

References

Results

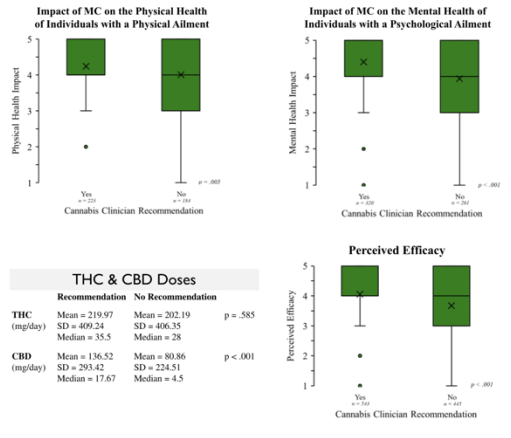
Efficacy: The efficacy of medical cannabis for those who had a provider recommendation (mean rank = 537.97) was statistically significantly higher than for those who did not have a provider recommendation (mean rank = 441.45), $U = 97,211.5, z = -5.545, p < .001$. **Dispensary staff:** The median advice seeking frequency for those who had a provider recommendation (3, sometimes) was statistically significantly higher than for those who did not have a provider recommendation (2, rarely), $U = 87,227, z = -7.832, p < .001, r = .25$. **Physical Health:** For individuals who use medical cannabis to treat symptoms of physical ailments, the impact that the medical cannabis use had on their physical health was rated significantly more positive for people with a cannabis clinician recommendation ($M = 4.24, SD = 0.77$) than for those who did not have a cannabis clinician recommendation ($M = 4.01, SD = 0.88, t(405) = 2.838, p = .005, d = .283$). **Mental Health:** For individuals who use medical cannabis to treat the symptoms of psychological ailments, the impact that the medical cannabis use had on the mental health of individuals who had a cannabis clinician recommendation to use medical cannabis (mean rank = 326.71) was significantly more positive than the impact that cannabis use had on the mental health of individuals who did not have a cannabis clinician recommendation to use medical cannabis (mean rank = 247.21), $U = 30,332, z = -6.123, p < .001, r = .25$. **Cannabinoids:** The daily dose of THC of individuals who had medical cannabis recommended by a licensed medical provider ($M = 219.97, SD = 409.24$) was not significantly different than the daily dose of THC of those who did not have medical cannabis recommended by a licensed medical provider ($M = 202.19, SD = 406.35, t(736) = 0.546, p = .585, d = .044$). On the other hand, the median CBD quantity for those who had a provider recommendation (17.67 mg.) was statistically significantly higher than for those who did not have a provider recommendation (4.5 mg.), $U = 47,039.5, z = -4.715, p < .001, r = .203$.

Discussion

An analysis of the health outcomes between those with cannabis clinician guidance demonstrate statistically significant results. MC patients who received cannabis guidance experienced greater symptom relief in treating their respective ailments. Those working with a cannabis clinician reported MC having greater benefits for their physical and mental health. These findings support the hypothesis that undertaking cannabinoid therapy with medical guidance results in more effective treatment. Furthermore, it was predicted that those working with a clinician would use higher daily doses of CBD and lower daily doses of THC. These usage pattern predictions were partially correct: those working with a cannabis clinician were more likely to use higher amounts of CBD, although other than that, there were no statistically significant variations in average daily THC doses between those that worked with a clinician and those who did not. MC patients who received cannabis guidance also sought advice from dispensary staff more often compared to MC patients who did not receive cannabis guidance.

Conclusion

Following the guidance of a medical cannabis clinician has shown significant positive results in a multitude of areas. It is important that MC users realize the likely positive outcomes of following the guidance of medical cannabis clinicians so that they can carry out a more organized and effective cannabinoid treatment.



	Demographics		
	Overall N = 988	Recommendation n = 542	No Recommendation n = 445
Age, years			
Mean (SD)	41.4 (12.6)	39.7 (11.2)	43.4 (13.9)
Gender, n (%)			
Female	638 (64.6%)	336 (34%)	302 (30.6%)
Male	339 (34.3%)	203 (20.5%)	136 (13.8%)
Non-Binary	10 (1%)	3 (0.3%)	7 (0.7%)
Race, n (%)			
White	776 (78.5%)	426 (43.1%)	350 (35.4%)
Black/African American	155 (15.7%)	94 (9.5%)	61 (6.2%)
Hispanic/Latino/a	145 (14.7%)	84 (8.5%)	61 (6.2%)
Native American	52 (5.3%)	32 (3.2%)	20 (2.0%)
Ailment, n (%)			
Chronic Pain	211 (21.4%)	114 (11.5%)	97 (9.8%)
Insomnia	98 (9.9%)	39 (3.9%)	59 (6%)
Anxiety	225 (22.8%)	125 (12.7%)	100 (10.1%)
Depression	92 (9.3%)	47 (4.8%)	45 (4.6%)
Route of Administration, n (%)			
Smoking	732 (74.1%)	415 (42%)	317 (32.1%)
Vaping	383 (38.9%)	226 (22.9%)	158 (16%)
Edibles	545 (55.2%)	310 (31.4%)	235 (23.8%)
Tinctures	138 (14%)	94 (9.5%)	44 (4.5%)

Robotic Control for Object Manipulation Using Artificial Intelligence

Andrew Ge,¹ Sheldon Peters,¹ & Alejandro Antonio¹

Summer Undergraduate Research Fellow (SURF) Project, 2024

¹California State University Channel Islands, Camarillo, California

Instructor's Introduction:

This Summer Undergraduate Research Fellowship (SURF) research project combined the reasoning power of Large Language Models (LLMs) and robotics to understand the capabilities of ChatGPT-4o in multimodal learning. The student researchers combined the Sawyer robotic arm, ChatGPT-4o, and Google Speech-To-Text services on a ROS Melodic system to develop a closed-loop system. A human may teach the robot a task and test the robot's understanding of that task. As the research continues, the students hope to conduct human studies to qualify the ChatGPT-4o's reasoning abilities in this context and assess its usability and adaptability. The research was started in Summer 2024 and is currently continuing through Fall 2024.

- Bahareh Abbasi, Assistant Professor in Mechatronics Engineering, October 2024.

The integration of Large Language Models (LLMs) with robotics offers new possibilities for developing autonomous interactive systems for manufacturing environments and has the potential to impact and transform how robots and humans collaborate on factory floors. This SURF project aims to develop a mechanism that enhances the process of teaching a robot to perform object manipulation tasks through interaction with a human expert. By leveraging the capabilities of LLMs to comprehend human conversations, we strive to ensure seamless and effective human-robot interaction. We have integrated the state-of-the-art LLM, ChatGPT-4o, and Google Speech-To-Text services with the Sawyer robotic arm running on ROS Melodic. We developed a closed-loop demonstration where the robot learns a task through human multimodal input, combining both language and visual cues. The LLMs acts as the robots' action planner and, according to the perceived multimodal human actions, decides how to execute the demonstrated task. In the future, the team plans to conduct human studies to evaluate the performance of the proposed system in real human-robot scenarios and assess its adaptability.



Robotic Control for Object Manipulation Using Artificial Intelligence

Andrew Ge | Sheldon Peters | Alejandro Antonio • Dr. Abbasi | Dr. Isaacs



Introduction

Despite significant advancements in robotics, achieving full autonomy for robots in various domains, such as manufacturing, remains a significant challenge. This SURF project aims to develop a mechanism that enhances the process of teaching a robot to perform object manipulation tasks through interaction with a human expert. By leveraging the capabilities of Large Language Models (LLMs) to comprehend human conversations, we strive to ensure seamless and effective human-robot interaction.

While most of the previous work focuses on using LLMs for task planning, here we take a new approach to use it for understanding of human expert's demonstration using multimodal (vision and speech) data and convert it to an actionable program.

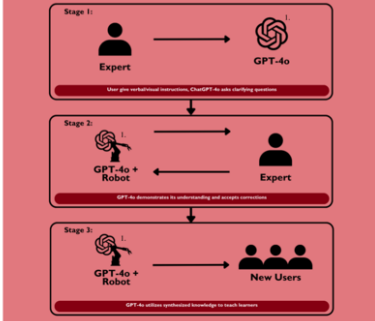
The applications of this work can be utilized in various fields such as healthcare, emergency response, manufacturing, hospitality, and more.

Proposed System

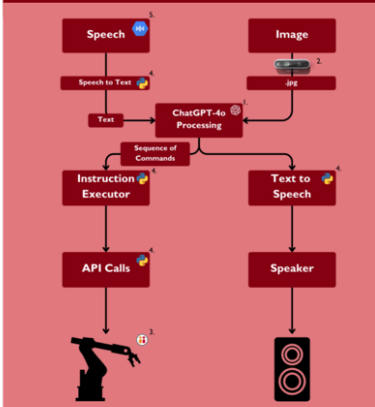
In this project, we utilize Sawyer, a robotic arm equipped with a state-of-the-art vision language model, ChatGPT-4o as its brain and planner. This LLM is capable of processing and understanding language and vision, while operating within Robot Operating System (ROS). With this architecture, our team hopes to train the LLM not only to perform a task, but also to train new users through a combination of expert instructions and LLM processing.



Human-Robot Interaction



System Components



Results

Here is a summary of the achievements of our team up to this point:

- Integrated ChatGPT-4o and Google Speech-To-Text services with the Sawyer robotic arm running on ROS Melodic
- Created a closed loop demonstration where a robot is taught a task using multimodal input in order to receive corrections and attempt to show understanding



SURF 2024 Github/Demo



<https://tinyurl.com/summersurf2024>

Future Objectives

In the future, the team hopes to continue our research to accomplish the following goals:

- Experiment to find optimal prompts for LLM understanding and comprehension
- Use more complex shapes/objects, (ex: foods, branded objects, faces, etc)
- Teach increasingly complex tasks such as using tools
- Optimize human user experience
- Recruit human participants for additional testing
- Use videos as part of multimodal input

Acknowledgements and Citations

SURF Staff | Maximilian Seligman
Cobot Team Representatives | Google Speech API
Rethink Robotics | OpenAI | Intel | ROS | Ubuntu

1. <https://openai.com/>, 2. <https://www.intelrelevance.com/dqph-camera-0435/>,
3. <https://www.rethinkrobotics.com/>, 4. <https://www.pyrob.org/community/faq/>
5. <https://www.captains.com/p/234094/Google-Cloud-Speech-to-Text/>

Openness to Experience and Nightmare Frequency

Leah Jones,¹ Josie Midkiff,¹ Bianca Nuno,¹ Saima Valdivia,¹ & Dr. Susan F. Beers¹

¹California State University Channel Islands, Camarillo, California

Instructor's Introduction:

Personality dimensions such as extraversion and conscientiousness have been shown to be associated with well-being. This study examined the potential relationship between one important personality dimension, openness to new experiences, with one aspect of well-being, sleep quality. Previous research suggested that individuals who are open to new experiences might be more likely to experience nightmares than individuals who prefer predictable situations and are uncomfortable with change. However, such studies necessarily used self-report techniques in which participants were explicitly asked about their dream content. The correlation between openness and nightmare frequency could be the result of an imaginative, curious, or creative mind that seeks out new stimulation, which then produces a rich, varied dream experience that is sometimes frightening. Alternatively, open personalities might be more easily influenced than other individuals by the simple question about the incidence of their nightmares. In other words, they might report having more nightmares because they are more suggestible to instruction. The research tested these hypotheses by randomly assigning participants to receive one of three types of instructions when asked about their nightmare frequency. One condition suggested they might have more nightmares than other people, another condition suggested they might have fewer, and a third condition used neutral language. The results confirmed that open personalities report having more nightmares than closed personalities, but type of instruction had no effect on any of the participant reports. Therefore, the findings support the idea that open personalities are not more suggestible but do experience richer and more frightening dreams. Knowing their tendency, individuals with open personalities may use these findings to make adjustments to their lives to improve well being.

- Susan Beers, Lecturer in Psychology, October 2024.

Undergraduate researchers were involved in experiment led by Dr. Susan Beers with a purpose of measuring the frequency of nightmares a participant has based on their personality type (open or closed). Ninety-two participants (57 women, 30 men, and 5 non-binaries; Mage = 23.71, SDage = 5.832) were asked to fill out two surveys, one measuring personality and the other measuring nightmare frequency. The HEXACO-60 was used to measure whether a participant had an open or closed personality (Michael et al., 2008). A four-statement questionnaire determined how often the participant experienced nightmares (Belicki, 1992). Three different instructions were embedded after the HEXACO-60 was completed that randomly assigned to each participant. Each instruction had a different level of suggestibility towards how many nightmares those with open personality may experience. The results concluded there was only

one main effect of personality on nightmare frequency, with no significant effect of instruction level or interaction, $F(1, 86) = 8.083, p = .006, \eta^2 = .086$.

Keywords: *personality, HEXACO, open personality, closed personality, nightmare frequency, instruction*

Openness to Experience and Nightmare Frequency

Leah Jones, Josie Midkiff, Bianca Nuno, and Saima Valdivia * Dr. Susan Fischer-Beers

Introduction

Are some personalities more likely to experience nightmares? Recent research has found that people who are open to experience report having more nightmares (Brekke et al., 2023). Perhaps this is because openness is positively correlated with imagination; specifically, experiential simulation and conscious imagination (Sassenberg et al., 2023). Alternatively, they may have more nightmares because they have better semantic long-term memory (Sassenberg et al., 2023) and their memories are more accessible than people who are resistant to new experiences.

On the other hand, people with open personalities may be more easily influenced by suggestions than others. Are individuals who are open to new experiences also more suggestible and therefore report more nightmares when asked?

Our research study tested whether open personalities report experiencing more nightmares because of their personality and/or because they are simply more susceptible to leading instructions. We hypothesized that open personalities would report experiencing a higher number of nightmares because they are imaginative and have better long-term memory. We also hypothesized that open personalities would be more susceptible to experimental instructions; their heightened suggestibility would cause them to report nightmare frequency based on the instructions they received.

Figure 2. Reported Nightmare Frequency as a Function of Type of Instruction and Openness to Experience

Instruction Type	Open Personality (Mean)	Closed Personality (Mean)
High Reporting	~7.5	~5.5
Low Reporting	~7.0	~4.5
Control	~6.5	~4.5

Results

A nightmare score was computed based on participants reports of frequency and intensity. The scores were then submitted to a 2 X 3 [Personality Type (open, closed) X Instruction (high suggestion, low suggestion, and no instruction)] between-subject analysis of variance (ANOVA). Individuals who had an open personality type ($M = 37.89, SD = 4.33$) reported more nightmares than closed individuals ($M = 24.85, SD = 3.70$), $F(1, 86) = 8.08, p = .006, \eta^2 = .086$. No main effect of instruction type on nightmare score was observed, $F(2, 86) = .47, p = .63, \eta^2 = .011$. There was no interaction between personality type and instruction type, $F(2, 86) = .611, p = .545, \eta^2 = .014$. Figure 2 displays the cell means for the six conditions of the experiment.

Method

Participants

Ninety-two undergraduate students from California State University Channel Islands participated in this study (57 women, 30 men, and 5 non-binaries; ($M_{age} = 23.71, SD_{age} = 5.832$). Participants were recruited through an online participation pool of psychology students and were compensated with extra credit.

Materials and Procedure

Participants were asked to complete two online questionnaires: the HEXACO personality survey (Lee & Ashton, 2009) and the nightmare frequency scale (Belicki, 1992). The HEXACO personality questionnaire measured participant's openness to experience among other variables. Only those items addressing openness to experience were of concern and were scored for this study. For example, one statement was "I'm usually quite flexible in my opinions when people don't agree with me." Responses were gathered using a 5-point Likert scale assessing agreement. The nightmare frequency scale consisted of 4 statements. For example, one statement was "For no reason, I awaken suddenly, startled and feeling afraid". Responses were gathered using a 5-point Likert scale.

Before reporting their frequency and intensity of nightmares, they were randomly assigned to one of three instructions. Figure 1 shows the three types of instruction in which participants were told they were likely to have (1) a lot of nightmares, (2) or very few nightmares, or (3) were not given specific instructions about nightmares.

Figure 1. Randomly Assigned Instruction Types

- ◆ Individuals who are open to new experiences are likely to report having **a lot of nightmares**. Their nightmares may also be very intense. These may be people who enjoy new experiences and are open to new ideas. Perhaps you are one of those individuals who are open to new experiences.
- ◆ Individuals who are open to new experiences are likely to report having **very few nightmares**. If they have nightmares, they tend to be very mild. These may be people who enjoy new experiences and are open to new ideas. Perhaps you are one of those individuals who are open to new experiences.
- ◆ Please answer the following questions regarding your experience with nightmares.

Discussion

Hypotheses Consistency

- ◆ Consistent with hypothesis: open personality is associated with greater nightmare frequency. **Openness to experience may result in more nightmares because of increased imagination and better long-term memory.**
- ◆ Inconsistent with hypothesis: instruction had no effect on reported nightmare frequency. **These findings suggest that individuals who are open to new experiences are not more suggestible. Therefore, the reported increase in nightmares is due solely to personality.**

Previous Research

- ◆ These findings are consistent with a study showing nightmare frequency and openness to experience were positively associated (Brekke et al., 2023).
- ◆ An inconsistent finding: demand characteristics, specifically implicit terminology, ascertain a certain response out of subjects (Corneille & Lush, 2023; Corneille & Hütter, 2020).

Real-World Applications

- ◆ Knowing there is a connection between open personalities and nightmare frequency may allow those with open personalities to better understand their experiences.
- ◆ Suggests that someone with open personality who experiences frequent nightmares might explore interventions that target habits of closed personalities.

Limitations

- ◆ Location of study (college campus, psychology students)
- ◆ Age of participants
- ◆ Participant could have been neglectful of instruction (demand characteristic), which would compromise external validity.

Future Research

- ◆ Do more nightmares change openness to experience? An individual could have so many frequent nightmares that they become more closed off to trying new things and less susceptible to instruction.
- ◆ Is there a positive association between open personalities, or any personality type, and manipulation through demand characteristics?