Relationship Between Preferred Decorations, Colored Walls and Nurses' Uniforms to the Hospital Anxiety of Pediatric Patients

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Abstract:-

➢ *Background and Aim*

Investigates the presence of relationship between preferred decorations, colored walls, and nurse's uniform to hospital anxiety of 150 pediatric patients admitted in the pediatric ward of Geregorio T. Lluch Memorial Hospital in Iligan City, Philippines.

➢ *Design*

The researchers utilized a cross-sectional correlational approach to explore probable associations between the variables and hospital anxiety, giving an insight into factors that are likely to affect hospital anxiety among the patients.

➢ *Results*

Key findings include a strong preference for ward decorations with themes. Among hobby spaces, crafting area had the highest number of likes. All colors were preferred for colored walls except for black, brown and burgundy. Having no wall art/mural, no natural elements in the decorations, and no decorations in ward rooms were disliked or not preferred. Themed wall mural, and gray and blue colored walls have significant relationship to hospital anxiety. There is also a significant relationship between stripes as nurses' uniform design and peach orange as a uniform color, and hospital anxiety.

➢ *Conclusion*

The overall finding was that most pediatric patients experienced similar levels of anxiety regardless of their preferences for decorations, colored walls, or nurses' uniforms. This imply that while children have varied preferences in terms of the hospital environment, these preferences influence their hospital anxiety levels during hospital stays.

Keywords:- Hospital Anxiety, Pediatric Patients, Decorations, Colored Walls, Nurse Uniform, Hospital Environment, Anxiety Reduction, Ward Decorations.

I. INTRODUCTION

Children visit primary healthcare providers at an average of 31 times for general check-ups from birth to age 21 (American Academy of Pediatrics 2011). In 2012 alone, 5.9 million children in the US were hospitalized (Weiss 2012). Every year, millions of children also see various healthcare professionals, including medical assistants, nurses, and therapists. Around 20% of people feel uneasy when seeing medical doctors, a phenomenon known as "white coat syndrome" (Sine 2008).

Children often feel scared and anxious when they are in a hospital or healthcare facility and have to interact with medical professionals (Lerwick 2016). Due to their developmental stage and limited cognitive abilities, children often communicate their emotions through behavior rather than words. Recent research highlights the significant impact of the hospital environment on patient anxiety. Marzukhi et al. (2020) found that design features such as lighting, noise control, and room layout can significantly reduce anxiety and promote mental health in inpatient mental health-care facilities. One study demonstrates that environmental factors like ambient conditions and privacy are crucial in reducing anxiety and depression in older adults within hospital settings (Arafat & Atreya 2024).

These studies collectively underscore the importance of optimizing hospital environments to enhance patient well-being and alleviate anxiety. Hence, this study aims to focus on preference of decorations, colored walls, and nurses' uniforms to the hospital anxiety of pediatric patients. The first gap this research addressed is a population gap, the necessity for comprehensive data that captures the preferences of pediatrics in a specific age bracket, rather than treating pediatrics as a homogeneous group (Sanna et al. 2020). The second gap this research addressed is a methodological gap, the limited use of comprehensive and varied methods (like surveys, interviews, or physiological measures) to capture and quantify the emotional responses of the respondents accurately (Sanna et al. 2020). It is suggested that a clinical trial is designed to evaluate the effect of different patterns, colors, and design of pediatric nurses' uniforms on the anxiety and cooperation of hospitalized children (Pakseresht et al. 2019).

This paper will aim to answer the specific questions:

- What is the preferred decorations of pediatric patients on the hospital ward?
- What is the preferred colored walls of pediatric patients on the hospitaward?
- What is the preferred nurses' uniforms of the pediatric patients?
- What is the level of hospital anxiety of the pediatric patients?
- Is there a relationship between preferred decorations, preferred colored walls and preferred nurses' uniforms, and the hospital anxiety of pediatric patients?

II. METHODS

➤ Research Design

The research design of the study on preferred decorations, colored walls, and nurses' uniform with regard to their relationship with hospital anxiety among pediatric patients utilized a cross-sectional correlational approach. It involved observing and measurement of variables at one point in time. This approach is used in identifying relationships between different variables without necessarily implying causality (Thomas 2020). This study was conducted at a specific point in time and on a representative sample of pediatric patients.

➤ Population and Sample

The study targeted children aged 6 to 15 years who were currently admitted in the pediatric ward at the time of data gathering. The sample was selected through consecutive sampling, the best choice for "rolling enrollment" into an accessible population, ensuring representation of the larger population and reducing selection bias (Winter 2020). The sample was drawn from the pediatric patient population within Gregorio T. Lluch Memorial Hospital. The sample size depended on recruitment feasibility and the diversity needed for robust findings (Grimes and Schulz 2020). Inclusion criteria focused on the specified age range, while exclusion criteria considered factors like cognitive impairments or severe medical conditions that could impact the expression of preferences or anxiety levels. The study aimed to generalize its findings to the broader pediatric patient population while minimizing biases and ensuring an accurate representation of the target group.

➤ Instrumentation/ Tools

The study employed the Hospital Anxiety and Depression Scale–Anxiety (HADS-A) with Bisaya and Tagalog translations and a researcher-made Visual Preference Survey Questionnaire to explore pediatric patients' preferences, anxiety levels, and the impact of environmental factors in hospitals. The questionnaire underwent validity testing by experienced registered pediatric nurse. Pilot tested data achieved a *Cronbach's alpha* of 0.897 for reliability, indicating acceptable internal consistency reliability (Tavakol and Dennick 2011). Actual data achieved a *Cronbach's alpha* of 0.895 for reliability. Quantitative assessments included structured survey questionnaires with likert-scale questions to gauge preferences, while anxiety levels were assessed using the HADS-A. Structured checklists facilitated real-time documentation of reactions and interactions, and color preference charts aided in identifying preferred colors for decorations and nurses' uniforms.

➤ Ethical Considerations

This research adhered to the ethics of obtaining informed consent from the participants, ensuring confidentiality, and using the data only for research purposes as mandated by the Adventist Medical Center College School of Nursing. All participants in the study were given informed consent forms with information about the aim and procedures of the study and their voluntary participation, and confidentiality and data-use assurances. Data collection began after it was clear that the participants completely understood and voluntarily agreed to participate in the study. This process observed ethical standards, such as autonomy on the part of the participants, and further developed a trustful research process.

➤ Data Gathering Procedures

The data gathering procedure for this research was conducted in a systematic and multi-phased approach to comprehensively investigate.

In the initial phase, eligible pediatric patients were identified within the hospital, and informed consent was obtained from both participants and their guardians, outlining the study's purpose and procedures.

The subsequent phase involved distribution of questionnaires to selected participants. The participants were given ample time to complete the questionnaires. The research team ensured that the participants understood the questions and provided assistance if needed.

Lastly, the collected data were then prepared for analysis. This involved checking the data collected for analysis.

III. DATA ANALYSIS

Data was analyzed using SPSS version 25 through several procedures. In order to do that, raw data was initially entered and cleaned in Microsoft Excel. Such cleaning consisted of checking for error, inconsistencies, and missing values. Afterwards, cleaned data were imported into IBM SPSS for analysis. Before the application of specific statistical tests, the normality of the continuous variable used in the study was checked by the researchers to ensure that the data distribution was appropriate for the statistical tests. After that, researchers answered each research question using statistical data analysis (frequencies, median, and interquartile range). To analyze research question number 5 related to the relationship between preferred decorations, colored walls, nurses' uniform and hospital anxiety, the researchers used Chi-square Test.

IV. RESULTS

➢ *Preferred Decorations: Themes, Posters, Hobby Spaces, Wall Art, Natural Elements, and Types of Decors*

Research question 1 states, "what is the preferred decorations of pediatric patients on the hospital ward?" As shown in Table 1, the respondents liked both animals/nature, fairytale themes and superheroes for ward room decorations. The least liked theme is "no theme." This suggests that the respondents preferred ward rooms decorated with cartoonized animals or nature, fairytale and superheroes.

Table 2 shows that the respondents liked religious art, learning charts, themed poster and medical poster for ward room decorations. This suggests that the respondents preferred to see visual posters as decorations in ward rooms regardless of the type.

Table 1 Descriptive Statistics of the Preferred Decorations by Themes (n=150)

Theme of Decorations	f (%) Like	f (%) Dislike	Median(IQR)
Animals/Nature	129(86.3)	21(14.0)	4.00(0.00)
Fairytale	120(80.0)	30(20.0)	4.00(0.00)
Superhero	91(60.7)	59(39.3)	4.00(3.00)
No theme	37(24.7)	113(75.3)	1.00(0.00)

Note: 1.00 - Dislike; 4.00 - Like

Table 2 Descriptive Statistics of the Preferred Decorations by Posters (n=150)

Poster	f (%) Like	f (%) Dislike	Median(IQR)
Learning Chart	128(85.3)	22(14.7)	4.00(0.00)
Religious Poster	118(78.7)	32(21.3)	4.00(0.00)
Themed Poster	113(75.3)	37(24.7)	4.00(0.00)
Medical Poster	92(61.3)	58(38.7)	4.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

Table 3 shows that the respondents liked all types of hobby spaces listed in the survey, such as play area, crafting area, storybook nook, and children's artwork display. This suggests that the respondents preferred to have hobby spaces in the ward setting regardless of the type.

Table 3 Descriptive Statistics of the Preferred Decorations by Hobby Spaces (n=150)

Hobby Space	f (%) Like	f (%) Dislike	Median(IQR)
Crafting Area	138(92.0)	12(8.0)	4.00(0.00)
Storybook Nook	134(89.3)	16(10.7)	4.00(0.00)
Play Area	130(86.7)	20(13.3)	4.00(0.00)
Artwork Display	118(78.7)	32(21.3)	4.00(0.00)

Note: 1.00 - Dislike; 4.00 - Like

Table 4 shows that the respondents liked themed, pattern and wallpaper mural as wall art for ward room. The least liked wall art is "no theme." This suggests that the respondents preferred ward rooms with wall art that has a theme such as animal/nature, wallpaper-type and pattern art.

Table 5 shows that the respondents liked indoor plants, indoor flowers and nature themed artwork as natural elements for ward room decoration. The respondents disliked "no natural decorations." This suggests that the respondents preferred ward rooms with the presence of nature or natural elements.

Table 6 shows that the respondents like 2D art, 3D art, interactive art as type of decorations for ward room. The respondents disliked "no decorations." This suggests that the respondents preferred ward rooms with painting and posters, sculptures and installations, and decorations that can be touched and played with.

Table 4 Descriptive Statistics of the Preferred Decorations by Wall Art/Murals (n=150)

Wall Art/Mural	f (%) Like	f (%) Dislike	Median(IQR)
Themed Mural	127(84.7)	23(15.3)	4.00(0.00)
Pattern Mural	106(70.7)	44(29.3)	4.00(3.00)
Wallpaper Mural	121(80.7)	29(19.3)	4.00(0.00)
No Wall Mural	47(31.3)	103(68.7)	1.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

Table 5 Descriptive Statistics of the Preferred Decorations by Natural Elements (n=150)

Natural Elements	ƒ (%) Like	ƒ (%) Dislike	Median(IQR)
Indoor Plants	127(84.7)	23(15.3)	4.00(0.00)
Indoor Flowers	119(79.3)	31(20.7)	4.00(0.00)
Nature-Themed Artwork	111(74.0)	39(26.0)	4.00(3.00)
No Natural Decorations	48(32.0)	102(68.0)	1.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

Table 6 Descriptive Statistics of the Preferred Decorations by Type of Decorations (n=150)

Type of Decorations	ƒ (%) Like	ƒ (%) Dislike	Median(IQR)
2D Art Decorations (Paintings and Poster)	122(81.3)	28(18.7)	4.00(0.00)

Table 6 (Continuation)

	ƒ (%) Like	ƒ (%) Dislike	Median(IQR)
3D Art Decorations (Sculptures and Installations)	108(72.0)	42(28.0)	4.00(3.00)
Interactive Art Decorations	99(66.0)	51(34.0)	4.00(3.00)
No Decorations	39(26.0)	111(74.0)	1.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

➤ *Preferred Colored Walls: Neutral, Primary, Secondary, Tint, and Shade colors.*

Research question 2 states, "what is the preferred colored walls of pediatric patients?" As shown in Table 7 the respondents liked the neutral colors white and gray for colored walls on pediatric hospital ward. The respondents disliked the color black. This suggests that the respondents preferred white and gray among the neutral colors on walls.

Table 8 shows the respondents liked all the primary colors blue, yellow and red as colors on walls. The color with the highest number of respondents who chose is blue. This suggests that the respondents preferred to see any primary colors on ward room walls.

Table 9 shows that the respondents liked all the secondary colors such as violet/purple, orange and green. This suggests that the respondents preferred to see any of the secondary colors on ward room walls.

Table 10 shows the respondents liked all the tint colors present in the survey. The respondent did not dislike any tint colors as color on walls. This suggests that the respondents preferred to see any of the tint colors on ward room walls.

As shown in Table 11, the respondents liked navy blue, mustard yellow, deep violet, and forest green among the shade colors. The respondents disliked burgundy and brown. This suggests that the respondents preferred to see navy blue, mustard yellow, deep violet, and forest green as colors on ward room walls.

Table 7 Descriptive Statistics of the Preferred Colored Walls by Neutral Colors (n=150)

Neutral Colors	ƒ (%) Like	ƒ (%) Dislike	Median(IQR)
White	131(87.3)	19(12.7)	4.00(0.00)
Gray	86(57.3)	64(42.7)	4.00(3.00)
Black	60(40.0)	90(60.0)	1.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

Table 8 Descriptive Statistics of the Preferred Colored Walls by primary Colors (n=150)

Primary Colors	ƒ (%) Like	ƒ (%) Dislike	Median(IQR)
Blue	127(84.7)	23(15.3)	4.00(0.00)
Yellow	122(81.3)	28(18.7)	4.00(0.00)
Red	94(62.7)	56(37.3)	4.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

Table 9 Descriptive Statistics of the Preferred Colored Walls by Secondary Colors (n=150)

Secondary Colors	f (%) Like	f (%) Dislike	Median(IQR)
Violet/Purple	121(80.7)	29(19.3)	4.00(0.00)
Orange	99(66.0)	51(34.0)	4.00(3.00)
Green	97(64.7)	53(35.3)	4.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

Table 10 Descriptive Statistics of the Preferred Colored Walls by Tint Colors (n=150)

Tint Colors	f (%) Like	f (%) Dislike	Median(IQR)
Pale Canary Yellow	127(84.7)	23(15.3)	4.00(0.00)
Sky Blue	124(82.7)	26(17.3)	4.00(0.00)
Lavender	124(82.7)	26(17.3)	4.00(0.00)
Pink	114(76.0)	36(24.0)	4.00(0.00)
Peach Orange	92(61.3)	58(38.7)	4.00(3.00)
Light Green	92(61.3)	58(38.7)	4.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

Table 11 Descriptive Statistics of the Preferred Colored Walls by Shade Colors (n=150)

Shade Colors	f (%) Like	f (%) Dislike	Median(IQR)
Navy Blue	130(86.7)	20(13.3)	4.00(0.00)
Mustard Yellow	117(78.0)	33(22.0)	4.00(0.00)
Deep Violet	90(80.0)	60(40.0)	4.00(3.00)

Table 11 (Continuation)

Forest Green	84(56.0)	66(44.0)	4.00(3.00)
Burgundy	59(39.3)	91(60.7)	1.00(3.00)
Brown	53(35.3)	97(64.7)	1.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

➤ *Preferred Nurses' Uniform*

The research question 3 states, "what is the preferred nurses' uniforms of the pediatric patients?" Table 12 shows that respondents liked the scrub set, short-sleeve, clinical dress, and clinical blouse and skirt style of nurses' uniform. The scrub set style have the most number of respondents who like this uniform style. This suggests that the respondents preferred nurses wearing any uniform styles.

Table 13 shows that the respondents liked all of the given choices of different patterns/design for nurses' uniform (themed, no pattern or design, stripes and polka dots). "Stripes" have the most number of respondents who liked this design on nurses' uniform. This suggests that the respondents preferred any of the given designs on nurses' uniforms.

Table 14 shows that the respondents liked white as color of nurses' uniform while gray and black are disliked as colors of nurses' uniform. This suggests that the respondents preferred white as neutral color on nurses' uniform.

Table 15 shows that the respondents liked the color blue, yellow and red as the color of nurses' uniform among the primary colors. Blue have the most number of respondents who liked this primary color. This suggests that the respondents preferred all among the primary colors on nurses' uniform.

Table 12 Descriptive Statistics of the Preferred Nurses' Uniform by Style (n=150)

Style	f (%) Like	f (%) Dislike	Median(IQR)
Scrub Set	129(86.0)	21(14.0)	4.00(0.00)
Short-Sleeve	105(70.0)	45(30.0)	4.00(3.00)
Clinical Dress	93(62.0)	57(38.0)	4.00(3.00)
Clinical Blouse and Skirt	77(51.3)	73(48.7)	4.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

Table 13 Descriptive Statistics of the Preferred Nurses' Uniform by Pattern Or Design (n=150)

Pattern or Design	ƒ (%) Like	ƒ (%) Dislike	Median(IQR)
Stripes	113(75.3)	37(24.7)	4.00(0.00)
Themed Design	105(70.0)	45(30.0)	4.00(3.00)
No Pattern or Design	100(66.7)	50(33.3)	4.00(3.00)
Polka Dots	76(50.7)	74(49.3)	4.00(3.00)

Table 14 Descriptive Statistics of the Preferred Nurses' Uniform by Color: Neutral (n=150)

Neutral Color	ƒ (%) Like	ƒ (%) Dislike	Media(IQR)
White	113(75.3)	37(24.7)	4.00(0.00)
Gray	75(50.0)	75(50.0)	1.00(3.00)
Black	65(43.3)	85(56.7)	1.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

Table 15 Descriptive Statistics of the Preferred Nurses' Uniform by Color: Primary (n=150)

Primary Color	ƒ (%) Like	ƒ (%) Dislike	Median(IQR)
Blue	129(86.0)	21(14.0)	4.00(0.00)
Yellow	116(77.3)	34(22.7)	4.00(0.00)
Red	104(69.3)	46(30.7)	4.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

Table 16 shows that the respondents liked violet and green among the secondary color on nurses' uniform . The respondents disliked the color orange on nurses' uniform. This suggests that the respondents preferred violet and green as secondary color on nurses' uniform.

Table 17 shows that the respondents liked all of the tint colors present in the survey. Sky blue have the most number of respondents who liked this tint color. This suggests that sky blue, followed by pale canary, yellow, pink, lavender, peach orange and light green are preferred tint colors on nurses' uniform.

Table 18 shows that the respondents liked the shade colors navy blue, deep violet, mustard yellow, forest green and burgundy. The only disliked shade color is brown. Navy blue have the most number of respondents who liked this shade color. This suggests that among the shade colors, the respondents preferred shade colors, except brown, on nurses' uniform.

Table 16 Descriptive Statistics of the Preferred Nurses' Uniform by Color: Secondary (n=150)

Secondary Color	ƒ (%) Like	ƒ (%) Dislike	Median(IQR)
Violet	116(77.3)	34(22.7)	4.00(0.00)
Green	91(60.7)	59(39.3)	4.00(3.00)
Orange	68(45.3)	82(54.7)	1.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

Table 17 Descriptive Statistics of the Preferred Nurses' Uniform by color: tint (n=150)

Tint Color	ƒ (%) Like	ƒ (%) Dislike	Median(IQR)
Sky Blue	136(90.7)	14(9.3)	4.00(0.00)
Pale Canary Yellow	134(89.3)	16(10.7)	4.00(0.00)
Pink	130(86.7)	20(13.3)	4.00(0.00)
Lavender	124(82.7)	26(17.3)	4.00(0.00)
Peach Orange	110(73.3)	40(26.7)	4.00(3.00)
Light Green	102(68.0)	48(32.0)	4.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

Table 18 Descriptive Statistics of the Preferred Nurses' Uniform by color: shade (n=150)

Shade Color	*f* (%) Like	*f* (%) Dislike	Median(IQR)
Navy Blue	141(94.0)	9(6.0)	4.00(0.00)
Deep Violet	118(78.7)	32(21.3)	4.00(0.00)
Mustard Yellow	101(67.3)	49(32.7)	4.00(3.00)
Forest Green	97(64.7)	53(35.3)	4.00(3.00)
Burgundy	76(50.7)	74(49.3)	4.00(3.00)
Brown	72(48.0)	78(52.0)	1.00(3.00)

Note: 1.00 - Dislike; 4.00 - Like

➢ *Hospital Anxiety Levels of Pediatric Patients in the Ward*

Research question 4 states, "what is the level of hospital anxiety of the pediatric patients?" As shown in Table 19, 46 respondents belonged to the normal category, while 104 respondents belonged to the abnormal case. This suggests that only 30.7% of the respondents did not have hospital anxiety, and 69.3% had hospital anxiety.

Table 19 Descriptive Statistics of the Level of Anxiety Among Pediatric Patients (n=150)

Anxiety Level	*f* (%)
Abnormal Case	104(69.3)
Normal	46(30.7)

➢ *Relationship between Preferred Decorations and Hospital Anxiety*

The chi-square analysis revealed a significant relationship between the decorations by wall art/mural (themed mural) and hospital anxiety levels of pediatric patients, $[\chi^2 \ (df = 1, n = 150) = 8.54, \ p = 0.003]$.

Table 20 Descriptive Statistics of the Relationship between Preferred Decorations by Wall Art/Mural and Hospital Anxiety

Anxiety		Themed Mural		
		Like	Dislike	Total
Abnormal	Count	94.0	10.0	104.0
	Expected	88.1	15.9	104.0
Normal	Count	33.0	13.0	46.0
	Expected	38.9	7.1	46.0

Note: Analysis is based on Pearson Chi-Square Test

➢ *Relationship between Preferred Colored Walls and Hospital Anxiety*

The chi-square analysis revealed a significant relationship between colored walls by neutral colors (gray) and hospital anxiety levels of pediatric patients, $[\chi^2 \ (df = 1, n = 150) = 3.70 \ p = 0.05]$.

Table 21 Descriptive Statistics of the Relationship between Preferred Colored Walls by Neutral Color and Hospital Anxiety

Anxiety		Gray		
		Like	Dislike	Total
Abnormal	Count	65.0	39.0	104.0
	Expected	59.6	44.4	104.0
Normal	Count	21.0	25.0	46.0
	Expected	26.4	19.6	46.0

Note: Analysis is based on Pearson Chi-Square Test

The chi-square analysis revealed a significant relationship between the colored walls by primary colors (blue) and hospital anxiety levels of pediatric patients, $[\chi^2 \ (df = 1, n = 150) = 3.76, \ p = 0.05]$.

Table 22 Descriptive Statistics of the Relationship between Preferred Colored Walls by Primary Color and Hospital Anxiety

Anxiety		Blue		
		Like	Dislike	Total
Abnormal	Count	92.0	12.0	104.0
	Expected	88.1	15.9	104.0
Normal	Count	38.9	11.0	46.0
	Expected	46.0	7.1	46.0

Note: Analysis is based on Pearson Chi-Square Test

> *Relationship between Preferred Nurses' Uniform and Hospital Anxiety*

The chi-square analysis revealed a significant relationship between the nurses' uniform by pattern/design (stripes) and hospital anxiety levels of pediatric patients, [$\chi2$ (df = 1, n = 150) =4.82, p = 0.02].

The *chi-square* analysis revealed a significant relationship between the nurses' uniform by tint colors (peach orange) and hospital anxiety levels of pediatric patients, [$\chi2$ (df = 1, n = 150) = 6.29, p = 0.01].

The *chi-square* analysis revealed a significant relationship between the nurses' uniform by shade colors (brown) and hospital anxiety levels of pediatric patients, [$\chi2$ (df =1, n = 150) = 6.01, p = 0.01].

Table 23 Descriptive Statistics of the Relationship between Preferred Nurses' Uniform by Pattern/Design and Hospital Anxiety

Anxiety		Stripes Design		
		Like	Dislike	Total
Abnormal	Count	73.0	31.0	104.0
	Expected	78.3	25.7	104.0
Normal	Count	40.0	6.0	46.0
	Expected	34.7	11.3	46.0

Note: Analysis is based on Pearson Chi-Square Test

Table 24 Descriptive Statistics of the Relationship between Preferred Nurses' Uniform by Tint Color and Hospital Anxiety

Anxiety		Peach Orange		
		Like	Dislike	Total
Abnormal	Count	70.0	34.0	104.0
	Expected	76.3	27.7	104.0
Normal	Count	40.0	6.0	46.0
	Expected	33.7	12.3	46.0

Note: Analysis is based on Pearson Chi-Square Test

Table 25 Descriptive Statistics of the Relationship between Preferred Nurses' Uniform by Shade Color and Hospital Anxiety

Anxiety		Brown		
		Like	Dislike	Total
Abnormal	Count	43.0	61.0	104.0
	Expected	49.9	54.1	104.0
Normal	Count	29.0	17.0	46.0
	Expected	22.1	23.9	46.0

Note: Analysis is based on Pearson Chi-Square Test

V. DISCUSSION

> *Summary of the Findings*

The study examined the relationship between preferred decorations, colored walls, nurses' uniforms, and hospital anxiety levels among pediatric patients aged 6 to 15 years. Key findings include a strong preference for ward decorations with themes. Among hobby spaces, crafting area had the highest number of likes. White and gray was the preferred neutral wall color. All primary colors were preferred with blue being the most preferred color. All secondary and tint colors were preferred for colored walls. All shade colors were liked except for brown and burgundy, which were not preferred colors for ward walls. Having no wall art/mural, no natural elements in the decorations, and no decorations in ward rooms were disliked or not preferred. For wall art, themed murals were most preferred by children with high anxiety levels.

The Pearson Chi-Square test revealed that themed wall mural, and some wall colors such as gray and blue have significant relationship to hospital anxiety. There is also a significant relationship between stripes as nurses' uniform design and peach orange as a uniform color, and hospital

anxiety. These finding provide valuable insights into the preferences and environmental factors that potentially influence hospital anxiety among pediatric patients.

> *Comparison with Earlier Similar Literature*

In the analysis of our findings, it is important to compare them with previous findings on pediatric healthcare environments and anxiety reduction. In a study by Jin et al. (2021), it was reported that the environmental alteration of pediatric healthcare settings can have a psychological effect if the alterations are designed to satisfy patients' emotional needs. Our data analysis showed that patients preferred theme decorations, although there was little association between these preferences and anxiety levels within the hospital.

On color preferences, our findings is supported by Annamary et al. (2016) and Khodakhah Jeddi et al. (2016). Patients tend to prefer neutral, primary, and secondary colors, with a significant relationship between gray and blue with anxiety. This supports the findings of Annamary et al. (2016), who observed that 31.2% of children associated the color blue with positive feelings, and those of Khodakhah

Jeddi et al. (2016), who noted that children displayed more interest in colors such as blue, red, purple, and orange.

The results reveal that color of the uniform might influence children's feelings towards healthcare environments. Albert et al. (2013) and uniform color might influence children's feelings towards healthcare environments, pointing out that blue, bold pink-patterned, and yellow-patterned tops were the base of positive emotions. Moreover, our results in regard to colors and designs were very much in line with different related studies. Uniforms can have a very important role in how children perceive their caregivers and consequently affect their level of anxiety.

The coherence of our empirical data with the reviewed literature emphasizes the connection between environmental design and emotional well-being in pediatric healthcare settings. It indicates, further, how tailored environmental factors, such as themed decorations, specific color schemes, and even friendly nurse uniforms, could effectively be manipulated to bring comfort to patients with or without hospital anxiety.

➢ *Implications*

It is the design of the healthcare facilities that effectively reduce the anxiety of the patient (Ford 2023). Through research, it has been proven that some of the environmental features reduce a patient's anxiety. Decoration and colors create a relaxed atmosphere. More integration is required to enhance psychological and emotional needs. Constant research and improvement of the hospital environment need to be integrated to understand and achieve the maximum from the hospital environment. This is achievable based on constant information from the patient. The integration of elements that create relaxation and comfortability will create a home-like environment that ensures a minimal level of anxiety amongst patients, consequently leading to better clinical outcomes.

➢ *Strengths of the Study*

Our study demonstrates several methodological strengths that enhance its robustness and reliability. Firstly, the comprehensive scope, which considers multiple environmental factors (such as colored walls, nursing uniforms, and decorations), provides a holistic view of potential influences on pediatric hospital anxiety. Secondly, the quantitative approach, utilizing questionnaires, ensures objective and standardized data collection, allowing for statistical analysis. Thirdly, the specific focus on pediatric anxiety makes the research highly relevant for improving patient care. Additionally, the context-specific findings within a specific hospital setting offer valuable insights. Lastly, ethical considerations strengthen the study's credibility. Overall, these strengths contribute to a solid foundation for understanding the relationship between environmental factors and pediatric anxiety.

VI. LIMITATIONS OF THE STUDY AND RECOMMENDATIONS

The sample size was limited, it consisted of only 150 pediatric patients from one hospital, which makes it difficult to generalize the findings. Findings from this research might not apply to a wide section of pediatric patients. Cause-effect relationships cannot be established with the correlational cross-sectional design since data is captured at only one point in time. A longitudinal approach might draw better insights in respect of time, due to time constraints the researchers found it difficult. Apart from this, the study does not cover the diversity of cultures and individuals, which could potentially change the preferences and levels of anxiety. For comprehensive analysis of how pediatric anxiety due to the hospital environment can be improved, future research should fill these gaps.

VII. CONCLUSION

The study focused on various preferences of children, such as that of decorations, colors, uniforms in hospitals in relation to their anxiety levels. Though the study reports to have found significant preferences, only a few could be related to levels of anxiety. This study recommends enhancing the hospital environment through aesthetic improvements, like decorations and colored walls, personalized for children to eliminate the hostile ambiance of hospitals for children. However, this does not suffice to lower the levels of anxiety. Relating nurses' uniforms to the patient's desires will be effective in the elimination of anxiety. The study also brings to light the complexity of this environmental psychology in healthcare; therefore, more studies are required to understand it. These studies require more extensive samples that are more diverse in nature.

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