

Relationship between Color Preference, Emotional Intelligence, and Interpersonal Relationship of Nursing Students

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Abstract

The purpose of this study is to provide the primary data for the program to enhance the adaptability of the nursing department students by analyzing their color preferences, emotional intelligence, and interpersonal relationships. The data were collected through structured self-reported questionnaires, and to verify the difference in the emotional intelligence and interpersonal relationship depending on the color preference, t-test, ANOVA, and the correlation were analyzed using the Pearson's correlation coefficients with the SPSS 20.0 program. In the results, the color preference of the nursing department students correlated with emotional intelligence and interpersonal relationships. Therefore, based on the results of this study, the study on color should be conducted continuously with the nursing department students so that their emotional intelligence and interpersonal relationships can be improved and reflect their results actively.

Keywords: Color, Preference, Emotional, Intelligence, Interpersonal, Relationship, Nursing, Students

1. Introduction

In contemporary society, color is used in numerous ways and affects our overall life [1]. The colors humans feel result from sensory reactions where the light that comes in through the optic nerves is interpreted as colors rather than something that physically exists [2]. While colors were used to describe objects or distinguish people of different classes, today, their use has been expanded to improve our physical and mental health [3].

Programs using color can affect our lives and health because colors can trigger psychological responses and changes in emotion, in addition to bringing about physical reactions. In recent years, many attempts and measures using color have been presented as a way to address the tension and anxiety felt by contemporary people. Various programs using color in psychological counseling have improved our quality of life and health. This is because colors bring about psychological responses and emotional change, leading to physical responses.

Colors stimulate people's emotions, and emotions triggered by colors constantly change [4]. However, the subjective preference of individuals for a specific color is referred to as color preference. The difference in color preference is due to the difference in expertise in

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color, interest, or temperament, leading to a difference in the degree of how color is recognized. Color preference may vary according to culture or environment, too. As such, understanding colors and color preferences can be a way to understand individuals' psychological states. By verifying people's preferred colors, we can apply the learning to their interpersonal or learning problems. Color intelligence is more affected by learning rather than something one is born with. As such, appropriate emotional intelligence education is needed. For example, those who have undergone emotional education through art education have a higher EQ [5]. Various factors affect interpersonal relationships. First, understanding his emotions and expressing them appropriately is essential [6].

As such, this study reviews the color preference of students majoring in nursing studies at universities and verifies the relation between EQ and interpersonal relationships by color preference to provide a basic set of data for the development of programs.

2. Methodology

2.1. Design of the study

This is a descriptive study on the correlation between the variables of color preference, EQ, and interpersonal relationships of nursing students.

2.2. Study tools

2.2.1. Color preference

To measure color preference, the eight colors used in [7]'s CRR, red, orange, yellow, green, turquoise, blue, purple, and magenta were used. This is a tool that uses both color and form to have a complementary effect. To review the EQ by color preference, colors were divided into warm colors (red, orange, yellow), cold colors (blue, turquoise, navy), and neutral colors (green, purple, magenta) according to the classification by Munsell.

2.2.2. Emotional intelligence

The translated version of the Wong and Law Emotional Intelligence Scale: WLEIS developed by Wong and Law [8] was used to measure emotional intelligence. WLEIS consists of 16 questions, with four questions on understanding one's own emotions, four on understanding others' emotions, four on emotional control, and four on emotional application. The response options ranged from "very much so," which was given 7 points, to "not at all," which was given 1 point, on a 7-point Likert scale. A higher score indicates higher emotional intelligence. At the time of development, the confidence level had a Cronbach's $\alpha = .90$, with the confidence level for this study being .75.

2.2.3. Changes in relationships

Relationships were measured using the Relationship Change Scale developed by Schlein and Guerney [9] and translated by Moon (1980). This tool measures the seven categories of satisfaction, communication, reliability, intimacy, openness, understanding, and sensitivity using 25 questions on a 5-point scale, with "not at all" given 1 point and "very much so" given 5 points. A higher score indicates a more positive relationship. At the time of development, Cronbach's alpha was .86, while for this study it was .94.

3. Subjects

The number of subjects was calculated using the G*Power 3.1.9.2 program, which is a program for calculating the number of samples using Cohen's formula. When correlation analyses for three independent variables were to be used with a significance level of 5% and a statistical significance of 95%, the minimum sample size was 185. Considering a dropout rate of 15%, it was decided on 250 subjects [10].

4. Data collection and ethical considerations

Data for the study was collected through two self-reporting structured questionnaires distributed to nursing students from June 17 to July 30, 2017. For ethical considerations, the study was reviewed and approved by the life ethics committee at D University (approval number: 1040647-201706-HR-002-03.) After explaining the purpose of the study, the time it would take for the questionnaire, and the confidentiality of personal data to the professors of the university and the subjects, voluntary participation and consent took place. Nursing students who wished to participate signed a consent form and were told they could drop out of the study anytime. It was also explained that the data would not be used for any other purpose than the study, and confidentiality would be preserved. The questionnaire took about 10-15 minutes.

5. Statistical analysis

The general characteristics of the study subjects were analyzed using actual figures, percentages, the mean, and standard deviation.

Color preference, emotional intelligence, and relationship changes were analyzed using mean and standard deviation.

The difference in color preference, emotional intelligence, and relationship changes across different general characters was analyzed using a t-test, ANOVA, and a Scheffe test for post-verification.

The correlation between color preference, emotional intelligence, and relationship changes was analyzed using Pearson's correlation coefficients.

6. Findings

6.1. General characteristics of the subjects

Of the 210 subjects, 91.9% (193 people) were female, and 8.1% (17 people) were male, with an average age of 24.38. Those between the ages of 21 and 25 accounted for the largest share of 82.4% (173 people), while those aged 26 or over accounted for 17.6% (37 people). For religion, 31.4% (66 people) were Christian, and 15.7% (33) were Catholic. In terms of siblings, those who were the eldest person accounted for the largest share at 46.7%(98 people), followed by the youngest among their siblings at 38.1% (80 people). In terms of color preference, blue was chosen the most by 21.4% (45 people), followed by yellow at 16.2% (34 people), magenta at 14.8% (31 people), red at 12.9% (27 people), green at 12.4% (26 people), purple at 9.5% (20 people), turquoise at 6.7% (14 people), and orange at 6.2% (13 people).

6.2. Variables of subjects

The average score for the emotional intelligence of the subjects was 82.98 points. Regarding the sub-factors, understanding of one's own emotions was highest at an average of 22.15 points, understanding of other's emotions was 21.72 points, emotional control was 20.21 points, and emotional application was the lowest at 18.88 points. The changes in the relationships between the subjects were higher than average, at a mean of 93.40 points. The sub-factors of sensitivity were an average of 18.28 points, followed by understanding at 16.14 points, communication at 14.98 points, satisfaction at 14.41 points, intimacy at 11.68 points, and reliability at 10.54 points.

6.3. Differences in variables across different general characteristics of the subjects

The differences in variables according to the subjects' general characteristics are as follows. For emotional intelligence, there was a significant difference for age ($F=2.91$, $p<0.001$) and color preference ($F=4.15$, $p=0.017$), but this was not statistically significant. However, there was a gender difference ($t=1.69$, $p=0.091$) and birth order among siblings ($F=2.25$, $p=0.083$). A post-analysis revealed that subjects who preferred cold colors had higher emotional intelligence than those who preferred warm colors. Relationship changes had a significant difference across genders ($t=3.41$, $p=0.001$), and while there was no statistical significance, there was also a difference in color preference ($F=2.48$, $p=0.086$).

7. Discussion

This study was conducted to provide a basic set of data for developing a program that can improve the adjustability of nursing students by analyzing the correlation between the students' color preferences, emotional intelligence, and relationships. After conducting the study on 210 senior-year nursing students, it was found that there was a difference in emotional intelligence and changes in relationships by color preference. Color is something one learns the meaning of, and thus, its meaning changes with an individual's temperament or the times [11]. Color carries symbolism that stands for universal emotions. Specific color preferences correlate with one's education environment, psychological effects from the surrounding environment, and character and temperament [12].

In a study conducted on daycare teachers to review the correlation between color reference and emotional intelligence, those who preferred warm colors had the highest emotional intelligence, while those who preferred cold colors had the lowest [13]. This is in line with preceding studies that found that those who like warm colors are more emotional than those who like cold colors [14]. Warm colors increase psychological energy and represent softness, warmth, and friendliness. The study finding of Jung [15] also states that warm colors represent happiness/enjoyment, comfort/serenity, and happiness, that children who frequently use warm colors express positive energies, and that warm colors express emotions.

Based on the study's findings, studies on the color associated with nursing students will be continued, and their results will be reflected in various programs to help students improve their emotional intelligence and relationships.

8. Suggestions

This study was conducted on nursing students at two universities and, therefore, needs iteration with a more significant number of subjects to verify the validity of the findings. There are subjective factors related to the perception and attitude toward color. Therefore,

various factors need to be factored in to generalize the study findings on color. Continued management is also encouraged to develop a clinical program that can help improve emotional intelligence and relationships using color.

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