

**DIGITAL EYE STRAIN AND ACADEMIC PERFORMANCE AMONG LEVEL 3
STUDENT NURSES AT A SELECTED UNIVERSITY IN ILOILO CITY**

A Research Paper

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Abstract

Due to the requirement to establish online learning during the quarantine period in this COVID-19 pandemic, the use of digital devices has increased significantly. Currently, as Covid 19 cases gradually decrease, online education shifts into the new norm known as blended learning, which combines face-to-face classroom experiences with online learning. As a result, students are still using gadgets to attend their online classes, work on their assignments, take quizzes using an online platform called Canvas, and even study for extended periods of time using their gadgets as their e-books or reviewers. This research aimed to determine the digital eye strain and academic performance among level 3 student nurses at a selected University in Iloilo City. With a total of 172 respondents, aged around 21 – 25 years old enrolled in the Nursing Department of Central Philippine University for the academic School Year 2022-2023. Using a descriptive and correlational quantitative design, an online survey was used to examine the profile of the respondents in terms of age, sex, and eye modifiers, digital eye strain, and academic performance. The completed questionnaire was collected, and the data were analyzed using the Statistical Package for Social Sciences (SPSS) through frequency distribution, Gamma, Cramer's V, descriptive statistics, and Spearman's Rho. The findings highlighted the relationship between digital eye strain and academic performance. Based on the data analysis and findings, the researchers concluded that there was no significant relationship between age and digital eye strain among student nurses in a selected private university. However, significant relationships were identified between sex and digital eye strain, as well as between eye modifiers and digital eye strain, among these student nurses. Conversely, age, sex, and eye modifiers did not exhibit a significant relationship with academic performance. Importantly, digital eye strain was found to have a significant relationship with the academic performance of

level 3 student nurses at a selected private university in Iloilo City. The prominent symptoms that the respondents experienced are headaches 'always', tearing 'often', eye pain 'occasionally', and double vision 'never'. In terms of intensity, the prominent symptoms that the respondents experienced are increased sensitivity to light 'intense', headache 'moderate', and feeling of a foreign body 'low'. As shown in the results, respondents with digital eye strain are mostly likely to be affected in their academic performance.

The Researchers

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Chapter 1

Introduction

Background of the Study

A group of visual and ocular symptoms known as digital eye strain (DES), also referred to as computer vision syndrome, have affected up to 50% of computer users. The usage of digital gadgets has dramatically increased over the past several years, putting several millions of individuals of all ages at risk for getting DES. Even while the condition's symptoms are often transient, it can still leave individuals in severe, recurrent discomfort and may have major economic repercussions when users of computers for work are affected by higher errors and more frequent breaks. (Sheppard, A.Wolffsohn, J. Digital eye strain: prevalence, measurement, and amelioration, 2018)

Digital Eye Strain is an important health concern among university students that severely impacts their academic performance. Typically, DES symptoms appear when a task's visual requirements are too great for a person's eyes to easily handle. Students who use computers or other digital screens for two or more hours continuously every day are most at risk for getting DES. (American Optometric Association. "Computer Vision Syndrome." N.D.)

The researchers aim to determine how often and how severe DES occur among university students and how that affects their academic performance from online instruction. In addition, consider how they manage their symptoms, including any comfort measures and treatments.

The 20-20-20 rule is an excellent guideline to follow while spending a lot of time in front of a screen. It states that every 20 minutes of screen time, you should take a break for at least 20 seconds and try to relax your eyes by gazing at something far away.

Dry eyes can be minimized by reminding oneself to blink frequently and completely.

(Chawla et al., 2020)

For students to be productive and efficient at studying in order to yield desirable results with regard to their academic performance they should be able to determine the impacts of DES on their academic performances.

Able to distinguish the alleviating factors and remedies to help manage DES the possible reasons for the discrepancy are the complexity of the online class schedule, pre-existing ocular diseases, and the kind of gadget and setting that are being used.

There is evidence that Digital Eye Strain has an impact on education and training. Although there is a growing number of research on digital eye strain on students around the world, there are not many published articles examining digital eye strain in Filipino students.

Due to the requirement to establish online learning during the quarantine period in this COVID-19 pandemic, the use of digital devices has increased significantly. Currently, as Covid 19 cases gradually decrease, online education shifts into the new norm known as blended learning, which combines face to face classroom experiences with online learning. As a result, students are still using gadgets to attend their online classes, work on their assignments, take quizzes using an online platform called Canvas, and even study for extended periods of time using their gadgets as their e-books or reviewers. The current study aimed to identify the digital eye strain and academic performance among level 3 student nurses at a selected university in Iloilo City. This study helped improve nursing education as well as the health of the faculty and student nurses.

Objectives of the Study

This study aimed to determine the digital eye strain and academic performance among level 3 student nurses at a selected University in Iloilo City.

Specifically, this study sought to:

1. Describe the personal profile among the level 3 student nurses in terms of their age, sex, and eye modifiers;
2. Determine the digital eye strain among level 3 student nurses;
3. Determine the academic performance among the level 3 student nurses;
4. Determine whether there is a relationship between the profile in terms of their age, sex, and eye modifiers, and digital eye strain among the level 3 student nurses;
5. Determine whether there is a relationship between the profile in terms of their age, sex, and eye modifiers, and academic performance among level 3 student nurses; and, finally,
6. Determine whether there is a relationship between digital eye strain and academic performance among level 3 student nurses.

Hypotheses

The following hypotheses are formulated in relation to the specific objectives of the study.

H01: There is no significant relationship between the profile in terms of their age, sex, and eye modifiers, and of digital eye strain among level 3 student nurses.

H02: There is no significant relationship between the profile in terms of their sex, age, and eye modifiers, and academic performance among level 3 student nurses.

H03: There is no significant relation between the digital eye strain and its academic performance among level 3 student nurses.

Theoretical Framework of the Study

This study was anchored on the theory, Environmental theory of Florence Nightingale which states that this theory emphasizes the importance of quality surroundings for a patient's recovery.

In this study, the respondents were assumed to be affected by their environment, which involves the kinds of devices, hours of exposure, light sensitivity, and room setting.

According to Florence Nightingale's environmental theory, clean air, pure water, enough food supplies, effective drainage, cleanliness of the patient's environment, and light are the environmental variables that have the biggest impact on health (particularly direct sunlight). The patient may have deteriorated health if any of these are lacking.

In this study, the Environmental Theory states that environmental factors affect health, especially light, since Nightingale believed that light sensitivity is one of the important factors that affect health. In our current online setting, students are now experiencing eye strain due to blue light, the kind of device, hours of exposure, and room setting. Many experienced eye dryness, excessive blinking, headache, and teary eyes which indicates Digital Eye Strain Syndrome.

This study was anchored on the theory, The Behavior System Model of Dorothy E. Johnson asserts that society is related to the environment in which an individual lives and that both the environment and environmental events have a direct impact on an individual's behavior.

In this study, the respondents were assumed to be associated by constant usage of digital screens that are exposed to harmful wavelengths of light emitted by screens during continuous working online classes.

According to Dorothy E. Johnson's Health Behavioral Theory, health is a deliberate adaptive reaction to internal and external stimuli in order to preserve stability and control, Physical, mental, emotional, and social responses are all included.

According to this study, those who use digital screens for extended periods of time while maintaining close focus (without taking a break) are at a significant risk of developing digital eye strain. Today, almost every institution, college, and home regularly uses a laptop or computer, which increases the risk of suffering tension headaches, low back discomfort, and computer vision syndrome (CVS).

Conceptual Framework

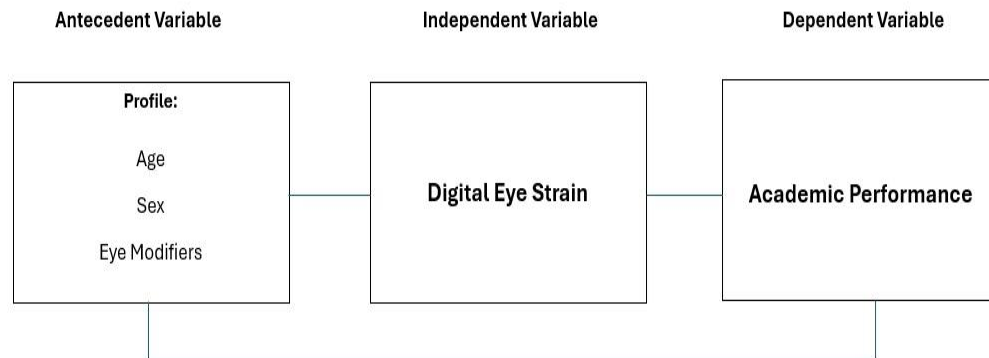


Figure 1. Schematic Diagram showing the assumed relationship among variables

Operational Definitions

To provide clarity and understanding, the following terms used in the study are defined accordingly.

Academic Performance. The term academic performance is the measurement of student achievement across various academic subjects. Teachers and education officials typically measure achievement using classroom performance, graduation rates, and results from standardized tests. (Ballot Pedia). In this study, Academic performance in the context of digital eye strain refers to the quantifiable results and accomplishments of students in their academic activities while taking into account the effects of repeated exposure to digital screens on their visual health. It covers how the prevalence and seriousness of symptoms of digital eye strain affect students' cognitive, intellectual, and educational advancement. It is measured by calculating the general weighted average of third-year students for the 2022-2023 academic year.

Age. The term age according to Cambridge Dictionary is defined as the length of time something or someone has been living. In this study, Age refers to the participant's age measured in years and the participants selected the appropriate category where their age is classified.

Digital Eye Strain. The term digital eye strain refers to the extended use of digital electronic devices can cause a group of visual and eye problems known as digital eye strain (DES). Its symptoms include dry eyes, itchiness, the sensation of a foreign object in the eye, blurred vision, watering, and headaches (Kaur, K. et al. 2022). In this study, Digital Eye Strain is referred to the reported eye problems when doing academic work during the COVID-19 pandemic. Digital Eye Strain is referred to if the total score is ≥ 6 points in Computer Vision Syndrome Questionnaire by Segui (2015), the respondent is considered to suffer from Digital Eye Strain Syndrome.

Eye Modifier. The term eye modifier refers to a feature or component of eyewear that modifies or enhances the function or performance of the eyes, possibly through the use of specialized coatings, materials, or technologies (American Academy of Ophthalmology). In this study, eye modifiers refers to factors or variables that modify or influence the experience of digital eye strain in individuals. It is categorized in the questionnaire as: prescription glasses which includes uncoated lens (standard hard coating only), multicoated lens (multi-combination of coating which includes anti-reflection, scratch resistant, anti-glare, anti-UV), and blue blocker lens (block or filter out blue light) and anti-radiation glasses which includes if it is bought from online shops (lazada, shopee, etc.) , bought from optical clinic (physical store), contact lens (synthetic lens placed directly on the surface of the eye) , and others can specify if their eye modifier is not on these choices. Data was measured by summarizing the mode of the respondents answer.

Intensity. The term intensity refers to the quality or state of being intense (Merriam Webster). In this study, Intensity refers to the level of discomfort experienced by an individual as a result of prolonged use of digital devices. This was measured with the use of a 14-item questionnaire modified from the Computer Visual Syndrome Questionnaire by Segui (2015). The mean scores were determined and categorized as follows: Low if the score is '0', Moderate if the score is '1', and Intense if the score is '2'.

Frequency. The term frequency refers to the rate of occurrence or repetition over a specific time period or in a sample of data (Oxford Languages). In this study, frequency is referred to how often the symptoms usually occur. This was measured with a 14-item questionnaire modified from the Computer Visual Syndrome Questionnaire by Segui (2015). The mean scores were determined and categorized as follows: Never if the score is '0', Occasionally if the score is '1', Often if the score is '2', and Always if the score is '3'.

Sex. The term sex refers to primarily linked to biological traits such as chromosome composition, gene activity, hormonal levels and actions, and sexual/reproductive anatomy. (Canadian Institute of Health Research). In this study, Sex is referred to as the biological characteristics of the respondents whether the respondent is male or female. It was measured nominally by simply asking respondents to identify their sex, whether male or female.

Significance of the Study

This study aimed to provide important information and knowledge that may benefit the following:

Department of Health. This study served as a guide to enhance information about the Digital Eye Strain and academic performance. It also increased the knowledge of the people on the prevention of Digital Eye Strain and factors that may contribute to their ocular health and academic performance.

Students. This study was beneficial to students to become knowledgeable of Digital Eye Strain and Academic Performance. This also helped students to have a basis of their current ocular health and academic status and may possibly help them identify when they need or seek help.

Teachers. This study provided useful information about the relationship between the Digital Eye Strain and academic performance. The teachers were able to use the findings of this study as a basis to teach and reinforce positive behaviors with their students where social and emotional support is available to help them with their academic concerns caused by their digital eye strain symptoms.

Future Researchers. This study provided a useful baseline for future research on the Digital Eye Strain. The results of this study provided significant insights for future researchers and a starting point for research pertaining to this topic. Additionally, they might enhance ideas offered and broaden the study's focus.

Scope and Limitations of the Study

This study aimed to determine the digital eye strain and academic performance among level 3 student nurses of a private university in the school year 2022-2023. It was a quantitative study, and the researchers collected the data using stratified random sampling and the total number is 172 respondents. The data collection began in March-April of 2023-2024 and data analysis formulation was in April 2024. The duration of the study lasted until the second semester of School Year 2023-2024 which is in May 2024. The only gathered information centered on their profile, digital eye strain and academic performance. This study was conducted using online surveys such as Google Forms. Respondents with constraints towards internet connection may affect data collection. This study did not include other external factors relating to social media use such as internet connection and availability of other gadgets and other devices. This type of study was chosen because of today's concern about the ongoing online classes and online assignments that students may experience digital eye strain and could possibly affect their academic performance. The study was only limited to the level 3 nursing students of a private higher educational institution in Iloilo City for the school year 2022-2023.

Chapter 2

Review of Related Literature and Studies

Digital Eye Strain

The COVID-19 pandemic has led to the widespread use of e-learning in private schools and universities, with children spending 8-12 hours a day in front of computer or mobile screens. However, this can cause harm to their eyes due to the high-energy waves emitted by these devices, leading to digital eye strain or computer vision syndrome. This is an emerging public health issue, with the risk increasing in proportion to the duration of digital screen exposure, and children being the most vulnerable group. Their diagnosis may be delayed as they may not report symptoms as quickly as adults. (Bhattacharya S, et al., 2022)

The occurrence of DES in the population varies between 22.3% to 39.8%. DES can be assessed through both subjective and objective means. It is usually treated with non-pharmacological and pharmacological approaches. Non-pharmacological treatments involve implementing proper ergonomic practices, maintaining regular blinking, using suitable lighting, carefully positioning digital devices, adjusting image settings (such as resolution, text size, contrast, and brightness), and taking breaks. Pharmacological treatments involve using artificial tears. (Bhattacharya S, et al., 2020)

Another field where the paradigm for online deployment has changed is education. During the pandemic, online learning resources were a cure-all. Since the start of the lockdown, schools, colleges, and universities all throughout the world have been using video conferencing services like Zoom and Google Meet. Compared to pre-lockdown levels, there was an increase in internet service utilization from 40% to 100%. The pandemic was significantly influenced by digital currency and digital payments. With

everyone confined indoors, the only entertainment available was on digital gadgets. Thus, the COVID-19 epidemic has fueled the digital revolution much more than it already was. In the end, this has led to an increase in digital eye strain symptoms in the majority of people, regardless of age, sex, ethnicity, or location (Kaur et al., 2022).

Digital eye strain (DES) is a term used by the American Optometric Association to describe a range of ocular and visual symptoms that result from extended usage of digital electronic devices. Symptoms include dry eyes, itching, feeling like a foreign body, watering, headaches, and blurred vision (Kaur et al., 2022).

Severity of Digital Eye Strain

Due to the COVID-19 pandemic, school-aged children have had to adapt to e-learning as their only option for studying, as restrictions on social gatherings have led to fewer outdoor activities. Consequently, children have experienced major changes in their daily routines, including increased screen time and confinement at home. Studies have shown a significant rise in screen time among children during the pandemic, with some reporting an increase from an average of 1.9 hours per day before the pandemic to 3.9 hours per day during the pandemic. Other studies have reported an even larger increase in screen time, up to 4.85 hours per day (Bhattacharya S, et al., 2020).

Extended usage of digital devices could result in an upsurge in eye-related problems like digital eye strain, dry eye-related complications, and myopia progression in children. Studies suggest that prolonged use of digital devices and reduced outdoor activities could contribute to myopia progression. It is predicted that myopia will affect around 50% of the world's population by 2050. The pandemic lockdown, which involves more screen time and home confinement, could expedite this prediction. This has led to the term "quarantine myopia" being used, but scientific research comparing myopia progression before and during the lockdown is lacking (Mohan, et al., 2022).

During the COVID-19 pandemic, a study was conducted to examine the impact of digital classrooms on the visual health of school-going children who attended online classes. The study utilized a web-based online form to assess this impact. Children were chosen from five randomly selected schools located in different parts of Kathmandu Valley, where online classes lasted for a minimum of two hours during the pandemic.

The study obtained 303 usable responses, resulting in a response rate of 41%. The average age of the participants was 10 years. The findings revealed that 64% of the children had online classes for up to six hours per day, with 44% of them using laptops and 38% using smartphones for their online classes. The most prevalent symptom reported by the children was headaches, affecting 39.3% of them. Other common symptoms included difficulty seeing bright light (35%) and eye itching (35%). Additionally, 40% of the children felt that their eyes were negatively affected after online classes (Dahalh & Kharel, 2022).

Multivariate analysis demonstrated that the total duration spent on digital devices was the primary risk factor associated with ocular symptoms. Consequently, the excessive use of digital devices during online classes has led to an increase in ocular symptoms and digital eye strain. The study concludes that it is crucial to raise awareness about preventive measures and strategies to mitigate the adverse effects caused by prolonged exposure to digital devices (DahalH & Kharel, 2022).

Academic Performance

The COVID-19 pandemic has disrupted normal university teaching, resulting in significant challenges for higher education. Face-to-face learning has shifted to online learning, which affects students' academic performance and well-being. Investigating and improving online learning is crucial for technology innovation and society development. A study in China found that lower-grade students may be more likely to

have reduced academic performance during online learning, especially when studying at home or in a dormitory. Many students experience physical issues such as eye strain (84%) and cervical stiffness (79%) and mental issues such as anxiety (66%). To enhance online learning in the aftermath of the pandemic, coping mechanisms are proposed that are vital for higher education and the advancement of a cultured and sustainable community (Li and Che, 2022).

The study showed that there is a positive correlation between the online education eye health scale in the Covid-19 pandemic and the eye fatigue questionnaire. The researchers used simple linear regression analysis to determine the predictive value of the online education eye health scale in predicting eye fatigue and found that it was a significant predictor of eye fatigue. Online education during the Covid-19 pandemic had a negative effect on the eye health of university students, and there was a positive correlation between the deterioration of eye health and eye fatigue during this period. In other words, as eye health worsened due to online education, eye fatigue increased, which can impact attention and academic performance (Kaya, 2020).

In the study of Munsamy A. J et al. conducted in 2020, they found that a significant portion of university students in RSA experienced digital eye strain during the COVID-19 pandemic lockdown. The prevalence of digital eye strain was determined to be 64.24 percent during this period. On weekdays and weekends, students spent an average of 13 hours per day looking at screens. The most commonly used devices were smartphones, which could be a contributing factor to the increased cases of digital eye strain. The high prevalence of digital eye strain among students may negatively impact their ability to study effectively, potentially leading to poor academic performance. It appears that public health eye care strategies may have been overlooked during the transition to mandatory online education. These findings among university students could reflect a broader societal concern (Munsamy, A. J et al.. 2022).

According to a study, headaches were very common and students' satisfaction with their online learning experiences was only mediocre, which had an impact on their ability to communicate (Hashish, et al., 2022).

A review of the disorder's impact on students was required due to the pandemic's widespread usage of digital gadgets in instruction. While most symptoms are temporary, the illness can be rather severe and impair focus and academic performance (Alabdulkader B., et al., 2021).

Level of Digital Eye Strain

According to the study of Victor, V. et al (2023). Online learning became the norm after the COVID-19 pandemic forced educational institutions all across the world to close. But this change resulted in greater screen time and increased susceptibility of e-learners to biopsychosocial problems. Furthermore, the research revealed noteworthy correlations between ocular strain and the electronic gadgets utilized, the study regimen, and the degree of experienced stress. The ethnicity of the subjects was also found to affect the amount of eye strain. The research findings indicate that the shift to virtual instruction within the COVID-19 pandemic resulted in moderate to severe eye strain and mental stress, underscoring the necessity for student interventions.

Level of Academic Performance

Based on the study of Owusu- Fordjour (2020) and Tamrat (2021) wherein they found out that when COVID-19 lockdowns happened, students faced a lot of problems with their studies. They lost interest, had trouble getting affordable internet and devices, couldn't use online resources easily, didn't talk with others much, and felt lonely.

Age and Digital Eye Strain

The study of Srednick, D. (2022) states that, An increasing number of people are suffering from a disorder known as computer vision syndrome as a result of our growing reliance on computers, tablets, smartphones, and other devices. If you spend two or more hours a day in front of a screen, you may already be familiar with the symptoms of CVS. Furthermore, digital eye strain can impact both adults and children and is not age-specific.

Sex and Digital eye strain

According to Alqarni. A, et al (2023), The COVID-19 pandemic has made virtual learning a crucial component of education, which has expanded the usage of digital technology. Investigating how virtual learning affects eye strain and figuring out

t the prevalence and consequences of DES were the two main goals of this study. Following participant completion of a questionnaire, the results showed a 68.53% DES prevalence. A substantial correlation was found between DES and the usage of smartphones for learning and eye drops for lubrication. Additionally, it was shown that women were more likely than men to experience severe DES symptoms. The creation of a tool to predict the prevalence of DES, like the Computer Vision Syndrome Questionnaire, could save clinic time and money by reducing the number of needless follow-up visits and referrals to optical specialists.

Eye modifier and Digital eye strain

The study of American Optometric Association (2023) states that, The eyes have to work harder when viewing a computer or other digital screen. Because of this, many people are more prone to developing symptoms connected to eye problems due to the special qualities and high visual demands of using computers and other digital screens.

Comfort and performance when using a computer or other digital screen devices can often be greatly impacted by the existence of even mild eyesight impairments. The majority of the time, the reason for CVS symptoms is that an individual's visual abilities are not sufficient to comfortably accomplish the task's visual needs.

Age and Academic performance

According to the study by Wambugu and Emeke (2019) it revealed that age does not significantly impact academic performance. Consequently, the researchers concluded that academic success is not correlated with a student's age. They suggest that achieving better academic results is likely more dependent on individual determination and effort than the student's age. The implication is that personal motivation and dedication play a more crucial role in academic achievement than chronological age.

Sex and Academic Performance

According to a study by Angwaomaodoko and Ejuchegahi (2023), gender differences do not significantly impact academic success among students in Nigerian colleges. Instead, the research found that students' perceptions of gender significantly influence their career aspirations. The study suggests that encouraging freedom in career choice is likely to guide students toward professions that may differ from traditional gender preferences. The study's results showed that male students had slightly higher overall CGPA scores compared to female students.

Eye Modifier and Academic Performance

According to Eze, P. E., Okoye, O., & Ezeh, C. (2020). Academic performance at various educational levels is a major focus for institutions worldwide. Proper vision is

essential for academic success, making it important to check children's vision throughout elementary school. Children with poor academic performance often have worse visual health. The study concludes that policies ensuring early detection of visual disorders in schools and primary care would significantly improve the academic performance of elementary students.

Digital Eye Strain and Academic Performance

The study of Munsamy, A. et al. (2022) found that a considerable percentage of university students experienced digital eye strain during the COVID-19 pandemic lockdown in RSA. The prevalence during lockdown was found to be 64.24 percent, with an average of 13 hours per day on weekdays and weekends spent in front of screens. The most common electronic device was a smartphone, which could potentially explain the increase in DES instances. The prevalence of digital eye strain in students may be a sign of poor academic performance and make it more difficult for them to study efficiently. It is possible that public health approaches to eye care were overlooked when online learning became required. These results in a university population might be a sign of a more serious social problem.

Synthesis

The COVID-19 pandemic has led to a significant increase in digital screen time among children and university students due to the shift towards e-learning. This increased usage of digital devices led to digital eye strain, dry eye-related complications, and myopia progression in children. Studies suggest that myopia will affect around 50% of the world's population by 2050, with the pandemic lockdown potentially expediting this prediction. Non-pharmacological and pharmacological treatments are available for digital eye strain.

Furthermore, online learning during the pandemic has affected the academic performance and well-being of university students. A study in China found that lower-grade students may be more likely to have reduced academic performance during online learning, especially when studying at home or in a dormitory. Students have also reported physical issues such as eye strain and cervical stiffness, as well as mental issues such as anxiety. The deterioration of eye health due to online education has a negative impact on academic performance, with a positive correlation between the deterioration of eye health and eye fatigue. Coping mechanisms are proposed to enhance online learning and promote the advancement of a cultured and sustainable community.

Chapter 3

Methodology

Research Design

This study used a descriptive correlational design. It investigated the description and relationship between the variables. Descriptive correlational research was utilized to identify the relationship between Digital eye strain and Academic Performance among Level 3 Student Nurses in a selected University in Iloilo City.

Target Population and Sampling Technique

This descriptive correlational study involved all level 3 student nurses both male and female within the age range of 20-22 years from a selected private higher educational institution in Iloilo City enrolled in S.Y 2022-2023, first semester. The total Target population was 301 and the sample size per section is 172. The simple random sampling was used in selecting the respondents. The official list of nursing students needed for this study was obtained from the college of nursing department office. The following were excluded from the study: the non-participation of level 1, 2 and 4 nursing students, the non-participation of the researchers who themselves were nursing students, too.

$$n = \frac{N}{1 + Ne^2} = n = \frac{301}{1 + (301)(0.5)^2} = 172$$

Table 1*Respondents per Section*

Population size per section	Solution	Sample size per section
Level III		
A-39	$= \frac{39}{301}(172)$	22
B-38	$= \frac{38}{301}(172)$	22
C-38	$= \frac{38}{301}(172)$	22
D-38	$= \frac{38}{301}(172)$	22
E-37	$= \frac{37}{301}(172)$	21
F-37	$= \frac{37}{301}(172)$	21
G-38	$= \frac{38}{301}(172)$	22
H-36	$= \frac{36}{301}(172)$	20
N=301		n=172

The sampling design used probability stratified random sampling utilizing ratio and proportion per strata. The samples were chosen using simple random sampling, specifically the fishbowl method. Stratified sampling is a random selection technique of items from a population divided into uniform subgroups (Tan, 2011).

The study utilized a formula for the sample size to solve for the needed sample size per section whereas, based on the formula there are twenty-two (22) nursing students from section A, also twenty-two (22) nursing students from section B, twenty-two (22) nursing students from section C, twenty-two (22) nursing students from section

D, twenty-one (21) nursing students from section E, twenty-one (21) nursing students from section F, twenty-two (22) nursing students from section G and twenty (20) nursing students from section H which makes the sample size a total of one hundred seventy-two (172) level 3 nursing students in a private higher educational institution in Iloilo City.

The fishbowl method was utilized in groups, with people forming smaller and larger circles. The external circle monitors the interaction between the inner group and provides feedback (Pam, 2013). In this study, the researchers collected the names of the students in each section. Using the lottery technique, the names of the students were encoded on a website that randomly selects participants. The chosen names from the given sample size were the respondents of this study.

Research Instrument

The research instrument used a modified content-validated questionnaire from Segui et al. The questionnaire included 4 parts.

The first part was the demographic profile of the respondents and composed of name, age, sex, and if they are using Eye modifiers.

The second part was questions related to the frequency of digital eye strain of the respondents. The questions were answerable by putting a checkmark in the items if symptoms occur as Never, Occasionally, Often or Always.

The third part was questions related to the intensity of digital eye strain of the respondents. The questions were answerable by putting a checkmark in the items if the intensity of the symptoms occur are Low, Moderate or Intense.

The fourth part was a question related to the respondents' academic performance during online classes. The question was answerable by putting the respondents' combined GWA of the first two years of online classes.

Ethical Consideration

Prior to collecting data, the study was submitted to the Research Ethics Review Board of Central Philippine University for evaluation of ethical integrity and approval. After the approval was granted, the researchers submitted a letter of authorization to the Department of the College of Nursing. The letter contained the nature, purpose, objectives, data collection method, and risk or benefits that result from respondents participating in the study.

This study comprised more than minimal risk to the respondents. Participating in the study carried certain risks for respondents. There was a psychological risk, as participants may become more aware of their digital eye strain symptoms, potentially leading to stress or anxiety. Privacy concerns also existed as the questionnaire might request personal information about eye health and academic performance. Protecting the confidentiality of this data was crucial to mitigate these risks. Furthermore, participants might feel compelled to give socially desirable answers, which could affect the accuracy of the study's results. To address these risks, it was important to adhere to ethical standards, ensure anonymity, and emphasize the voluntary nature of participation, thereby minimizing any negative effects on the participants.

Participants in the study could gain valuable insights into the relationship between digital eye strain and academic performance, specific to their academic level and field of study. By sharing their experiences, they contributed to a deeper understanding of the challenges associated with extended digital device use and its potential impact on student nurses' academic performance. Additionally, participants may become more aware of digital eye strain and receive recommendations to alleviate its effects, promoting a healthier academic environment. The findings from their contributions could inform interventions and support mechanisms aimed at improving the well-being and academic success of student nurses in the digital age.

To ensure ethical treatment and voluntary participation in the research project, it was essential to establish clear withdrawal guidelines. These guidelines specify the conditions under which participants could leave the study without any penalties.

Participants could withdraw from the study at any time, with or without reason, and this right was entirely under their control. Most importantly, respondents should be properly told that they would not be penalized or lose any rewards if they decided to withdraw.

Participants may also request to withdraw if they consistently failed to comply with research guidelines, such as giving false or incomplete information. However, this should be explained in a way that was encouraging rather than forceful.

Participants should be deemed ineligible and removed from the study if, throughout the duration of the investigation, they no longer meet the eligibility requirements, such as if they stopped being a student nurse at the private institution.

In addition, those who were unable to participate in future data collecting because of unanticipated events, including moving or personal emergencies, ought to be regarded as having resigned from the research.

Respondents were informed of their answers and treated with utmost confidentiality. It was not divulged to anybody and was solely utilized for research purposes. To maintain anonymity as well as privacy, numbers rather than names of the respondents were used. At the conclusion of the study, documentation of answers in the questionnaire was kept by the researcher for safe keeping. These research materials were disposed of when the results of the study have been disseminated by the researcher.

The information of this study was disseminated and distributed after the analysis, interpretation, and revisions of the study. Confidentiality and anonymity of the respondents were upheld by avoiding the use of the names of the respondents when the results are discussed. The respondents are allowed access to the results of the study conducted as they wish. They were provided with all the results pertaining to the study which they are involved in. Moreover, they were informed in a timely manner if information becomes available.

The confidentiality of the information provided by the respondents was guaranteed, and they made aware that it was only be used for research in compliance with R.A. 10173, or the Data Privacy act of 2012.

The selection of participants for this study is distinguished by a firm dedication to voluntariness and the complete absence of coercion. Participants are assured that their

participation is completely voluntary and that they are free to decline participation or to leave the study at any time without consequences or having to provide an explanation for their decision. Participants' choices about their participation were not affect their affiliations with the researchers or with any other parties. The participants' freedom and comfort are given top priority by the researchers, who value their ability to make decisions based on thoughtful consideration and personal preferences.

The ethical conduct of research necessitated the proper disposal of research materials, protecting privacy, being environmentally conscious, and following rules. The researchers followed a methodical approach that includes putting into practice a comprehensive data management plan aimed at protecting participant privacy through the careful de-identification of sensitive information.

By investigating the impact of digital eye strain on academic performance, this study can contribute to the community by enhancing awareness among student nurses, faculty, and parents about the importance of maintaining healthy eye habits while using digital devices. The study can also lead to the development of educational programs and campaigns that promote eye health and provide guidelines for healthy device use. Moreover, these findings can inform the development of institutional policies and interventions to support student nurses in managing and alleviating eye strain symptoms. By addressing the impact of digital eye strain on academic performance, this study contributes to the well-being and success of student nurses, ultimately benefiting the community by fostering a culture of eye health awareness and promoting optimal academic performance.

In this study, a certificate of appreciation was provided to participants as a way to incentivize and recognize their involvement. The certificate was given to each participant

upon completing their participation in the study and expressed gratitude for their time, insights, and dedication. It included the participant's name and acknowledge their important role in advancing research in student nursing decision-making. By issuing these certificates, the researchers aim to show their recognition for the participants' willingness to share their experiences and perspectives, which greatly contributes to the success of the study.

The act of giving a certificate of appreciation demonstrates the researchers' commitment to engaging participants in an ethical and respectful manner. It highlights the significance of voluntary involvement and reinforces the idea that the participants' contributions are valued. Furthermore, it ensures that participants have a positive experience and feel acknowledged for their role in advancing knowledge in the field.

It should be noted that the certificate of appreciation has not any monetary value, nor it affect the participants' rights to withdraw from the study at any time. Its sole purpose is to express gratitude and recognize their participation.

In the course of conducting research, it is essential to identify and resolve any potential conflicts of interest. The researchers declare that they have no financial or personal interests that would compromise the study's integrity or affect its conclusions. They are committed to doing this study in a completely transparent, unbiased, and ethically acceptable manner. In the event any conflicts of interest develop, they were immediately declared, and appropriate steps taken to reduce their influence on the conduct and results of the research.

Validity and Reliability of Questionnaire

The research instrument's reliability was evaluated using statistical methods. The analysis revealed a high reliability for the "Frequency" variable, with a correlation coefficient of .707, indicating that consistent measurement of knowledge levels. On the other hand, the variable "Intensity" also showed high reliability coefficients of 0.843. These findings, supported by Cronbach's Alpha Values, suggest reliable measurement of frequency and intensity among participants. Moreover, all cases were valid, with no exclusions noted in the case processing summary, ensuring the data's integrity.

In summary, the research instrument demonstrates high reliability across different variables, confirming its effectiveness in measuring intended constructs.

Data Collection and Processing

A request for authorization to conduct a study via in person and online survey, specifically Google Forms, the researchers submitted a letter of approval to the Dean of the College of Nursing. To make sure that the quality of the data that was acquired from the respondents was correct, the research tool was put through validity and reliability testing prior to beginning the data collection process. A panel of three professionals, a statistician, an ophthalmologist, and a nurse professor, validated the questionnaire. After the pre-testing, the chosen students were instructed on how to complete them and informed of the study's objectives. The researchers emphasized that their identity and privacy were ensured and their answers to the questionnaire was confidential to others. After the data has been collected it was statistically treated, analyzed, and interpreted.

Data Processing and Statistical Analysis

The collected data was examined, processed and tabulated. Descriptive statistics, including frequency distribution tables, means, percentages, gamma correlation, cramer's V, and spearman's rho were used to summarize the data gathered from the study population. Part 1 of the questionnaire results were categorized according to scores. Part 2 and Part 3 of the questionnaire were calculated using the following formula:

$$Score = \sum_{i=1}^{16} (Frequency\ of\ symptom\ occurrence)_i \times (intensity\ of\ symptom)_i$$

If the total score is ≥ 6 , the respondent is considered to suffer Computer Vision Syndrome (Segui, et al., 2015). Then it was categorized according to scores. Part 4 of the questionnaire results were categorized according to general weighted average. After categorizing the data, these were encoded and tabulated. Tables were used for data presentation.

Data processing was conducted using the Statistical Package for Social Science (SPSS).

The analysis of the respondents' profile in terms of age, sex, and eye modifiers, were done using frequency distribution. This is to set values in a data set and their frequencies, and the data are distributed along the scale of a variable divided into intervals (Riffenbrugh, 2006).

A measure of association for ordinal variables is the gamma. The gamma spectrum spans -1.00 to 1.00. A gamma of 0.00 indicates no link, a gamma of 1.00 indicates a perfect positive relationship between the variables, and a gamma of -1.00 indicates a perfect negative relationship (Empire State University, 2023). Gamma was

utilized to determine the correlation between the profile in terms of their age and digital eye strain, and academic performance.

An impact size metric for the chi-square test of independence is called Cramer's V. It gauges the degree of correlation between two category fields (IBM, 2024). Cramer's V was utilized to determine the relationship between profile in terms of sex and digital eye strain, sex and academic performance, eye modifier and digital eye strain, and eye modifier and academic performance.

A given data collection, which may be a sample of the population or a representation of the complete population, is summarized by descriptive statistics, which are quick informational coefficients (Hayes, 2024). Descriptive statistics were utilized to summarize the given data for digital eye strain and academic performance.

Spearman's rho measures the strength of and direction of the association of two ranked variables (Question Pro, 2024). Spearman's rho was utilized to measure the correlation between digital eye strain and academic performance.

Chapter 4

Results and Discussion

This chapter presents the key findings and analysis of the investigation derived from the data collected from the participants. The data will be presented, analyzed, and interpreted specifically within the scope of the research questions and objectives.

Personal Characteristics of Participants

Table 1 shows the data on the profile of participants in terms of their age, sex, and eye modifiers. The results revealed that the majority of the respondents (80.2%, n = 138) were aged 21 to 22 years old, while (19.8%, n = 34) were aged 23 to 25 years old. In regard to sex, females comprised (82%, n = 141), while males accounted for (18%, n = 31). As for eye modifiers, a majority of (67.4%, n = 116) were respondents with eye modifiers, whereas (32.6%, n = 56) were respondents without eye modifiers.

Table 1

Profile of Participants in terms of their Age, Sex, and Eye Modifiers

Categories of the Variables	f	%
Age in years		
21 to 22	138	80.2
23 to 25	34	19.8
Total	172	100
Sex		
Male	31	18
Female	141	82
TOTAL	172	100
Eye Modifiers		
Without	56	32.6
WITH	116	67.4
Total	172	100

Table 2A presents the frequency of symptoms experienced by respondents related to digital eye strain. The findings revealed that double vision was most commonly reported as never experienced, while eye pain, eye redness, burning, and tearing were predominantly described as occasionally felt. Conversely, symptoms such as excessive blinking, feeling that sight is worsening, blurring of vision, increased sensitivity to light and difficulty focusing near vision were least frequently reported as occasionally experienced. These results indicate that respondents generally experienced symptoms of digital eye strain occasionally.

Table 2.A

Distribution of responses on items under frequency

		ALWAYS %	OFTEN %	OCCASIONAL LY%	NEVER %
F1	Double Vision	4.1	14.0	24.4	57.6
F2	Eye Pain	4.7	16.9	52.9	25.6
F3	Eye Redness	1.7	9.3	51.7	37.2
F4	Burning	1.2	14.0	51.2	33.7
F5	Tearing	7.0	29.1	49.4	14.5
F6	Itching	2.9	20.9	48.3	27.9
F7	Headache	11.6	24.4	47.1	16.9
F8	Feeling of Foreign Body	.6	9.3	45.3	44.8
F9	Dryness	10.5	20.3	44.8	24.4
F10	Excessive Blinking	7.6	16.9	43.0	32.6
F11	Feeling that Sight is Worsening	9.3	20.3	42.4	27.9
F12	Blurring of Vision	16.3	22.1	37.8	23.8
F13	Increased Sensitivity to Light	16.3	23.8	35.5	23.8
F14	Difficulty Focusing for Near Vision	8.1	16.3	30.8	44.8

Table 2B The study findings indicate a range of symptom intensities experienced by respondents in relation to digital eye strain. Among these, a feeling of a foreign body was frequently reported low. Conversely, symptoms such as increased sensitivity to light, headache, tearing, and blurring of vision were predominantly described as intense. Conversely, dryness, eye pain, itching, difficulty focusing on near vision, and burning were commonly reported at a moderate. These results underscore the varying degrees of discomfort experienced by respondents due to digital eye strain.

Table 2B

Distribution of responses on items under intensity

		INTENSE %	MODERATE %	LOW %
I1	Feeling of Foreign Body	2.9	22.7	74.4
I2	Double Vision	4.1	22.1	73.8
I3	Excessive Blinking	4.1	23.8	72.1
I4	Eye Redness	3.5	25.0	71.5
I5	Burning	1.7	29.1	69.2
I6	Difficulty Focusing of Near vision	5.2	26.7	68.0
I7	Itching	4.1	30.8	65.1
I8	Eye Pain	8.2	28.5	63.4
I9	Dryness	9.9	32.0	58.1
I10	Feeling that Sight is Worsening	11.1	33.1	55.8
I11	Blurring of Vision	7.0	39.0	54.1
I12	Tearing	7.6	42.4	50.0
I13	Headache	15.1	43.6	41.3
I14	Increased Sensitivity to Light	18.1	40.7	41.3

Table 3A shows the level of Digital Eye Strain of respondents during the first two school years of college. As shown in table, the majority (39.5%) of nursing students reported to have Below average DES score. Whereas an equal result (30.2%) of nursing students have Average and Above average results. The mean Digital Eye Strain of the respondents shows 11.3488, meaning nursing students have below average digital eye strain. This supports the study of Victor, Parsan, Dookran, Lulkool and Ali (2023) where they concluded that during COVID-19, the shift to online learning resulted in moderate to severe levels of eye strain, emphasizing the need for student community interventions.

Table 3A

Level of Digital Eye Strain

	Digital Eye Strain	
	f	%
Below average (4 or below)	68	39.5
Average (5 to 15)	52	30.2
Above average (16 or above)	52	30.2
Total	172	100.0
N= 172min=0.00	max=47	mean= 11.3488 sd= 11.71970

Table 3B The table shows the average Academic Performance of the respondents during the first two years of college. As shown on the table 37.2% of nursing students have Above average results. Whereas most nursing students with 41.9% have Average results. While 20.9% have below Average results. The mean of the Academic performance shows 1.7012. which means most of the nursing students have an Average Academic performance. This supports the study of Owusu- Fordjour (2020) and Tamrat (2021) wherein they found out that when COVID-19 lockdowns happened, students faced a lot of problems with their studies. They lost interest, had trouble getting affordable internet and devices, couldn't use online resources easily, didn't talk with others much, and felt lonely.

Table 3B

Level of Academic Performance

	Academic Performance	
	f	%
Above average (1.55 or below)	64	37.2
Average (1.56 to 1.84)	72	41.9
Below average (1.85 or above)	36	20.9
Total	172	100.0

N= 172 min= 1.23 max= 2.89 mean= 1.7012 sd= 0.29396

Table 3C Indicates the relationship between Age and Digital Eyes Strain of the respondents. As shown in the table, 23-25 years old nursing students have below average digital eye strain (44.1%). In addition, 31.9% are students who are between 21-22 years old who experience an Average Digital Eye Strain. While 23.5% of ages 23-25 years old have an average Digital Eye Strain. Based on the findings, there is a weak association between Age and Digital Eye Strain as shown by the Gamma value of -0.036. The association is not significant at .05 level as shown by the p-value of .824. Therefore, there is a failure to reject the null hypothesis which states that There is no significant relationship between the profile in terms of their age, sex, and eye modifiers, and of digital eye strain among level 3 student nurses. This implies that age has no bearing on the digital eye strain among the respondents. This supports the study of Srednick (2022), Where it is concluded that Digital eye strain can impact both adults and children and is not age specific.

Table 3C

Relationship between Age and Digital Eye Strain

Age	Digital Eye Strain							
	4 or below		5 to 15		16 or above		Total	
	f	%	f	%	f	%	f	%
21-22	53	38.4	44	31.9	41	29.7	138	100
23-25	15	44.1	8	23.5	11	32.4	34	100
Total	68	39.5	52	30.2	52	30.2	172	100
Gamma= -.036					p= .824 (not significant)			

Table 3D stresses the relationship between Sex and Digital Eye Strain of the respondents. Finding shows that 6 out of ten (61.3%) who have below average DES are Male respondents. While 34.8% of the students who have an Above Average DES are Female respondents. Based on the findings, there is a strong association between the DES and Sex of the respondents as shown by the Cramer's V value of .339. The association is significant at .05 level as presented by the p-value of .007. Therefore, there is a success to reject the null hypothesis which states that There is no significant relationship between the profile in terms of their age, sex, and eye modifiers, and of digital eye strain among level 3 student nurses. This indicates that the Sex of the respondents has a bearing on the Digital Eye Strain. This supports the study of Alqarni, Alabdulkader and Alghamdi (2023), which concludes that women were more likely than men to experience severe DES symptoms.

Table 3D

Relationship between Sex and Digital Eye Strain

Sex	Digital eye strain							
	4 or below		5 to 15		16 or above		Total	
	f	%	f	%	f	%	f	%
Male	19	61.3	9	29.0	3	9.7	31	100
Female	49	34.8	43	30.5	49	34.8	141	100
Total	68	39.5	52	30.2	52	30.2	172	100
Cramer's V=	.339				p= .007			

Table 3E shows the relationship between Eye Modifier and Digital Eye Strain of the respondents. The findings for the test of relationship between Eye Modifier and Digital Eye Strain of the respondents are presented in Table 16. Results revealed that 51.8% without eye modifier have below average DES, 31.9% with eye modifier have average DES, and 34.5% who have eye modifier have above average DES. The findings show there is a moderate association between eye modifier and Digital Eye Strain as shown by the Cramer's V value of .281. The association is significant at .05 level as shown by the p-value of .031. Therefore, there is a success to reject the null hypothesis which states that there is no significant relationship between the profile in terms of their age, sex, and eye modifiers, and of digital eye strain among level 3 student nurses. This suggests that Eye modifier has bearing on the digital eye strain of the respondents. This supports the study of American Optometric Association (2023) that concludes that a person's visual abilities are not sufficient to comfortably fulfill the task's visual demands, symptoms of CVS arise.

Table 3E

Relationship between Eye Modifier and Digital Eye Strain

Modifier	Digital Eye Strain							
	4 or below		5-15		16 or above		Total	
	f	%	f	%	f	%	f	%
Without Modifier	29	51.8	15	26.8	12	21.4	56	100
With Modifier	39	33.6	37	31.9	40	34.5	116	100
Total	68	39.5	52	30.2	52	30.2	172	100
Cramer's V= .281					p= .031			

Table 3F Indicates relationship between Age and Academic Performance of the respondents. As shown in the table, 40.6% of 21-22 years old nursing students have experience Below average academic performance. Whereas 58.8% are students between 23-25 years old who experience an Average academic performance. While 21.7% of ages 21-22 years old experience an Above academic performance. Based on the findings, there is no association between Age and Academic Performance as shown by the Gamma value of .169. The association is not significant as shown by the P-value of .244. Therefore, there is a failure to reject the null hypothesis which states that there is no significant relationship between the profile in terms of their age, sex and eye modifiers and academic performance among level 3 student nurses. This suggests that age has no bearing on the Academic performance among respondents. This supports the study of Wambugu and Emeke (2019) who revealed that age didn't significantly impact academic performance. Consequently, the researchers concluded that how well you do in school isn't tied to your age. They propose that achieving better academic results may depend more on your personal determination rather than your age.

Table 3F

Relationship between Age and Academic Performance

Age	Academic Performance						Total	
	1.55 or below		1.56 to 1.84		1.85 or above		f	%
	f	%	f	%	f	%	f	%
21-22	56	40.6	52	37.7	30	21.7	138	100.0
23-25	8	23.5	20	58.8	6	17.6	34	100.0
Total	64	37.2	72	41.9	36	20.9	172	100.0
Gama = .169							P = .244	

Table 3G - Indicates relationship between Sex and Academic Performance of the Respondents. As shown in the table, 29.0% of Male nursing students experience Below average Academic performance. While 21.3% of Female nursing students are experiencing Above academic performance. Based on the findings, there is a weak association between Sex and Academic Performance as shown on the Cramer's V value of .096. The association is not significant as shown on the P-value of .453. Therefore, there is a failure to reject the null hypothesis which states that there is no significant relationship between the profile in terms of age, sex and eye modifiers and academic performance among level 3 student nurses. This implies that the Sex of the respondents has no bearing on Academic performance. This aligns with the study of Angwaomaodoko (2023) which showed that gender doesn't have a significant impact on how well students do academically in Nigerian colleges.

Table 3G

Relationship between Sex and Academic Performance

Sex	Academic Performance							
	1.55 or below		1.56 to 1.84		1.85 or above		Total	
	f	%	f	%	f	%	f	%
Male	9	29.0	16	51.6	6	19.4	31	100.0
Female	55	39.0	56	39.7	30	21.3	141	100.0
Total	64	37.2	72	41.9	36	20.9	172	100.0
Cramer's V = .096		P = .453						

Table 3H indicates the Relationship between Modifier and Academic Performance of the Respondents. As shown in the table, 33.9% of nursing students without modifier experience below Academic performance. Whereas 41.4% nursing students with modifier experience Average academic performance. While 23.2% of nursing students without modifier experience Above academic performance. As shown in the findings, there is a weak association between Eye modifiers and Academic Performance as shown on the Cramer's V value of .052. The association is not significant as presented by the P-value of .792. Therefore, there is a failure to reject the null hypothesis which states that there is no significant relationship between profile in terms of their age, sex, eye modifiers and academic performance among level 3 student nurses. This indicates that the Eye modifiers of respondents have no bearing on the Academic performance. This supports Helveston's study (n.d), which confirms the results in school-aged children and found no link between visual ability and academic performance.

Table 3H

Relationship between Eye Modifier and Academic Performance

Modifier	Academic Performance							
	1.55 or below		1.56 to 1.84		1.85 or above		Total	
	f	%	f	%	f	%	f	%
Without modifier	19	33.9	24	42.9	13	23.2	56	100.0
With modifier	45	38.8	48	41.4	23	19.8	116	100.0
Total	64	37.2	72	41.9	36	20.9	172	100.0
Cramer's V-	.052		P = .792					

Table 3I Indicates the Relationship between Digital Eye strain and Academic Performance of the respondents. As shown in table, majority of the students who have Below average DES have an academic performance that is 1.55 or below (44.1%). This is higher than the proportion of students who have Above average DES that has a 1.85 or above academic performance (28.8%). Based on the findings, there is an Inverse or Strong relationship between Digital Eye Strain and Academic performance of the student nurses by the Spearman's rho value of = -.441. The association is significant at .05 level as shown by the p-value of .035. Therefore, the null hypothesis that There is no significant relationship between the digital eye strain and its academic performance among level 3 student nurses is rejected. This implies that the Digital Eye Strain has a strong bearing on the Academic performance of the respondents. This is consistent with the findings of Munsamy (2022) which states that, Students who experience high rates of digital eye strain may find it difficult to study efficiently, which could have a negative effect on their academic performance. Strategies for providing eye care in public health may have been disregarded when online learning became required. The results obtained from university students may indicate a wider social issue.

Table 3I

Relationship between Digital Eye Strain and Academic Performance

Digital Eye Strain	Academic Performance							
	1.55 or below		1.56 to 1.84		1.85 or above		Total	
	f	%	f	%	f	%	f	%
4 or below	30	44.1	27	39.7	11	16.2	68	100
5 to 15	17	32.7	25	48.1	10	19.2	52	100
16 or above	17	32.7	20	38.5	15	28.8	52	100
Total	64	37.2	72	41.9	36	20.9	172	100
Spearman's rho= -.441					p= .035			

Chapter 5

Summary, Findings, Conclusions, and Recommendations

This Chapter presents the summary, findings, conclusions and recommendations.

Summary

This descriptive-correlational study was conducted to determine the Digital Eye Strain and Academic Performance Among Level 3 Student Nurses in a Selected University in Iloilo City. Specifically, this study sought to:

1. Describe the personal profile among the level 3 student nurses in terms of their age, sex, and eye modifiers;
2. Determine the digital eye strain among level 3 student nurses;
3. Determine the academic performance among the level 3 student nurses;
4. Determine whether there is a relationship between the profile in terms of their age, sex, and eye modifiers, and digital eye strain among the level 3 student nurses;
5. Determine whether there is a relationship between the profile in terms of their age, sex, and eye modifiers, and academic performance among level 3 student nurses; and, finally,
6. Determine whether there is a relationship between digital eye strain and academic performance among level 3 student nurses.

This study was a descriptive-correlational research design which utilized a simple random sampling then, the sampling design used probability stratified random sampling utilizing ratio and proportion per strata. The samples were chosen using simple random sampling, specifically the fishbowl method. Slovin's formula was used to calculate the

sample size (n) given the population size (N) and a margin of error (e). It is computed as $n = N / (1 + Ne^2)$. Only the level 3 student nurses were considered as the respondents of this study. An online questionnaire was used to gather the data needed for the study. Upon completion of survey were scored, classified, and computer-processed analyzed and interpreted, Data was conducted using the Statistical Package for Social Science (SPSS). The Statistical tools employed were frequency distribution, descriptive statistics, Gamma correlation, Cramer's, and Spearman's rho.

Findings

1. The majority of the respondents (80.2%, n = 138) were aged 21 to 22 years old. Females comprised the majority of respondents (82%, n = 141), and 64.7% (n = 116) of respondents had eye modifiers.
2. Based on the 28- item questionnaire adapted from Segui's Computer Vision Syndrome Questionnaire that was classified into two categories: Frequency and Intensity given, the majority of the students (39.5%) have below average digital eye strain.
3. The mean score (11.3488) for the level of Digital Eye Strain by the student is below average.
4. Based on the GWA of nursing students on their first two years of college. Most of the students (41.9%) have average academic performance.
5. The mean score for the Academic performance of the nursing students shows (1.7012).
6. Based on the Frequency part of the questionnaire given revealed that 11.6% of respondents noted headaches as "always", while 29.1% of the respondents noted tearing as "often". Additionally, 52.9% reported "occasionally" for eye pain, indicating a

significant portion of participants experiencing discomfort. 57.6% of respondents reported "never" for double vision.

7. According to the intensity section of the questionnaire, it was found that 18.1% of the participants described Increased Sensitivity to Light as "intense," while 42.4% reported headache as "moderate." Furthermore, a significant proportion of respondents (74%) indicated a "low" level of feeling of foreign body, suggesting that many participants experienced discomfort.

8. There is a weak association between Age and DES. Hence, there is no significant relationship between Age and Digital Eye Strain.

9. There is a strong association between Sex and Digital Eye Strain of the respondents. Therefore, there is a significant relationship between sex and digital eye strain.

10. There is a moderate association between eye modifier and digital eye strain of the respondent. Hence, there is a significant relationship between eye modifier and digital eye strain.

11. There is a weak association between Age and Academic Performance. Therefore, there is No significant relationship between Age and Academic Performance.

12. There is a weak association between Sex and Academic Performance. Thus, there is no significant relationship between Sex and Academic Performance.

13. There is a weak association between Eye modifier and Academic Performance. Therefore, there is no significant relationship between Eye modifier and Academic performance.

14. There is an inverse or strong relationship between Digital Eye Strain and Academic performance of the student nurses. Thus, there was a significant relationship between Academic performance and Digital eye strain.

Conclusions

Based on the data analysis and findings, the researchers concluded that there was no significant relationship between age and digital eye strain among student nurses in a selected private university. However, significant relationships were identified between sex and digital eye strain, as well as between eye modifiers and digital eye strain, among these student nurses. Conversely, age, sex, and eye modifiers did not exhibit a significant relationship with academic performance. Importantly, digital eye strain was found to have a significant relationship with the academic performance of level 3 student nurses in a selected private university in Iloilo City.

Recommendations

1. The findings of this study shall be given to the governing bodies in the education to incorporate eye health education modules into the curriculum to raise awareness among student nurses about the importance of regular eye care practices and potential impact of digital eye strain on academic performance. The goal is to encourage the incorporation of eye health education modules into the existing curriculum. By doing so, we aim to raise awareness among student nurses about critical importance of regular eye care practice.
2. The study's findings shall be shared with healthcare and educational establishments to encourage collaboration among health professionals, educators, students, and researchers. This collaboration aims to facilitate interdisciplinary discussions, exchange of knowledge, and formation of partnerships, thereby improving the quality and effectiveness of future research and interventions. By collaborating, we create a diverse range of knowledge and idea that can greatly improve understanding in this field.

3. Nursing schools should collaborate with eye care professionals to develop and implement specific programs aimed at educating students about digital eye strain prevention, such as proper eye exercises, screen time management and ergonomic workstation setups. This collaboration is important in creating a curriculum that gives knowledge and skills that nursing students must do to protect and maintain their eye healthcare.
4. Future studies should explore the long-term effects of digital eye strain on academic performance and overall well-being among student nurses, considering factors such as duration of screen time, lighting conditions, and individual susceptibility to eye strain. This will promote student nurses' academic performance and well-being.
5. The study findings indicate the prevalence of digital eye strain among nursing students. It is imperative to prioritize continuous monitoring of digital eye strain levels among students in the future. By making continuous monitoring a priority, universities can ensure a proactive approach to managing digital eye strain among nursing students and promote long-term eye health and academic success.

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Appendix A

Validated Research Instrument

DIGITAL EYE STRAIN AND ACADEMIC PERFORMANCE AMONG LEVEL 3 STUDENT NURSES IN A SELECTED UNIVERSITY IN ILOILO CITY

Part I. Personal Data

Instruction: Answer the questions honestly by filling up the corresponding questions on the blank space and by putting a check mark (✓) in the checkbox.

Name (optional):

Age: _____

Sex:

- Female
- Male

1. What kind of eyewear coating do you use?

Prescription Glasses

- Uncoated Lens
- Multi Coated Lens
- Blue Blocker Lens

Anti-Radiation Glasses

- Bought from Online Shop
- Bought from Optical Clinic
- Contact Lens**
- None**

If others, please specify: _____

2. How frequently do you wear your prescription glasses/contact lens? Please disregard if you answered NONE in the first question.

- Whole Day
- 12 hours
- 8 hours
- <6 hours

3. Average hours you spent with your gadgets when attending online classes?

1-2 hrs

3-5 hrs

6-8 hrs

If others, specify: _____

Part II & III. The frequency and intensity of digital eye strain (Segui et al, 2015)

Instruction: Answer the questions honestly by filling up the corresponding questions on the blank space and by putting a check mark (✓) in the checkbox.

a. First the **frequency**, that is how often the symptoms occurs considering that:
NEVER = the symptoms does not occur all

OCCASIONALLY = sporadic episodes or once a week

OFTEN OR ALWAYS = 2 or 3 times a week or almost everyday

b. Second, the **intensity** of the symptom:
Remember: If you indicated **NEVER** for frequency, you should not mark anything for intensity.

1. Are you experiencing any of the following symptoms while using digital devices? (Please check all that apply)

	a. Frequency			
	NEVER (0)	OCCASIONAL LY (1)	OFTEN (2)	ALWAYS (3)
1. Burning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Itching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Feeling of a Foreign Body	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Tearing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Excessive Blinking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Eye Redness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Eye Pain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Dryness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Blurring of Vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Double Vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Difficulty Focusing for Near Vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Increased Sensitivity to Light	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Feeling that Sight is Worsening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Headache	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. How would you rate the intensity of your symptoms while using digital devices?

(Please check all that apply)

	b. Intensity		
	LOW (0)	MODERATE (1)	INTENSE (2)
1. Burning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Itching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Feeling of a Foreign Body	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Tearing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Excessive Blinking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Eye Redness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Eye Pain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Dryness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Blurring of Vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Double Vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Difficulty Focusing for Near Vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Increased Sensitivity to Light	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Feeling that Sight is Worsening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Headache	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part IV. Academic Performance

Answer the questions honestly by filling up the corresponding questions on the blank space.

1st Year (S.Y. 2020-2021) and 2nd Year (S.Y. 2021-2022)

Combined General Weighted Average (1st Year and 2nd Year):_____

Appendix B

RESEARCH ETHICS REVIEW BOARD

CENTRAL PHILIPPINE UNIVERSITY
Lopez Jaena St., Jaro, Iloilo City, Philippines
329-1971 to 79 local 3336

INFORMED CONSENT FORM (ICF) TEMPLATE

(Version no. 03-2023)

1. KEY INFORMATION ABOUT THE RESEARCHERS

Title of the Study: **“DIGITAL EYE STRAIN AND ACADEMIC PERFORMANCE AMONG LEVEL 3 STUDENT NURSES IN A SELECTED UNIVERSITY IN ILOILO CITY”**

Name of Researcher/s: DELGADO, Jeeyan Grace P.
DEPRA, Liza C.
DIANE, Rv Jerecho B.
DIOSABAN, Doane Maxwell B.
DIOSANTA, Nellicon Vale R.
DOLLETE, Rena Mariel A.
DUMAPIT, Paula Jane L.

Research Adviser: Prof. Adelfa Dusaran

Department/College: College of Nursing

Institution: Central Philippine University

2. INTRODUCTION/BACKGROUND OF THE STUDY

You are invited to take part in this research study. This form contains information that will help you in deciding whether to participate or not in this study/research. Before you decide to participate in this study, you will be given enough time to read and understand the contents of the informed consent. If there are words or concepts that you do not understand feel free to ask questions at any time, the researchers are willing to explain it to you and your questions will be answered to your satisfaction. The study will begin once you have signed the informed consent form.

This study is an important health concern among university students that severely impacts their academic performance. Typically, DES symptoms appear when a task's visual requirements are too great for a person's eyes to easily handle. Students who use computers or other digital screens for two or more hours

continuously every day are most at risk for getting DES. (American Optometric Association. "Computer Vision Syndrome." N.D.)

3. PURPOSE OF THE RESEARCH

The purpose of this research study is to determine the digital eye strain and academic performance among level 3 student nurses in a selected University in Iloilo City.

1. Describe the personal profile among the level 3 student nurses in terms of their age, sex, and eye modifiers.
2. Determine the digital eye strain among level 3 student nurses.
3. Determine the academic performance among the level 3 student nurses.
4. Determine whether there is a relationship between the profile in terms of their age, sex, and eye modifiers, and digital eye strain among the level 3 student nurses.
5. Determine whether there is a relationship between the profile in terms of their age, sex, and eye modifiers, and academic performance among level 3 student nurses.
6. Determine whether there is a relationship between digital eye strain and academic performance among level 3 student nurses.

4. TYPE OF RESEARCH INTERVENTION/DATA GATHERING INSTRUMENT

The researchers will use a modified content-validated questionnaire from Segui et al. Before you decide to participate (or allow your child to participate) in this study, you will be given enough time to read and understand the contents of the informed consent. Your questions will be answered to your satisfaction. The study will begin once the informed consent form has been signed. The study will include four parts. The first part will be the demographic profile of the respondents and will be composed of name, age, sex, and if they are using Eye modifiers. The second part will be questions related to the frequency of digital eye strain of the respondents. The questions are answerable by putting a checkmark in the items if symptoms occur as Never, Occasionally, Often or Always. The third part will be questions related to the intensity of digital eye strain of the respondents. The questions are answerable by putting a checkmark in the items if the intensity of the symptoms occur are Moderate or Intense. The fourth part will be questions related to the respondents' academic performances during online classes. The questions are answerable by putting a checkmark in the items and they can specify their answers about their academic performances during online classes.

5. PARTICIPANT SELECTION (INCLUSION & EXCLUSION CRITERIA)

You are chosen as a participant based on the following criteria: This study will involve all level 3 student nurses from a selected private higher educational institution in Iloilo City enrolled in S.Y 2022-2023, first semester. The total Target population is 301 and the sample size per section is 172. The simple random

sampling will be used in selecting the respondents. The official list of nursing students needed for this study will be obtained from the college of nursing department office. The following are excluded: the non-participation of the researchers who themselves are nursing students.

6. VOLUNTARY PARTICIPATION

The selection of participants for this study is distinguished by a firm dedication to voluntariness and the complete absence of coercion. Participants are assured that their participation is completely voluntary and that they are free to decline participation or to leave the study at any time without consequences or having to provide an explanation for their decision. Participants' choices about their participation will not affect their affiliations with the researchers or with any other parties. The participants' freedom and comfort are given top priority by the researchers, who value their ability to make decisions based on thoughtful consideration and personal preferences.

7. PROCEDURE

You will be given content validated questionnaire adopted from Computer Vision Syndrome Questionnaire by Segui et al (2015) will be sent to the respondents via Facebook Messenger group chat. The respondents will be given ample time to answer, then the data will be recorded by the researchers as soon as the responses are submitted. Each participant will be assigned an ID number only known to the researcher(s). The name of the Participants will not be written or included in the forms that will be filled in by the researcher. The above-mentioned procedure has been primarily made and intended for the purpose of this study. All information gathered during this study will be private and strictly confidential.

8. DURATION OF THE STUDY

This study will be conducted September 2022 to February 2023.
You will be given 10-15 minutes to answer the questionnaire.

9. RISKS AND INCONVENIENCES

This study comprises more than minimal risk to the respondents. Participating in the study carries certain risks for respondents. There is a potential psychological risk, as respondents may become more aware of their digital eye strain symptoms, potentially causing stress or anxiety. There could be privacy concerns, as the questionnaire may ask for personal information related to eye health and academic performance. Ensuring the confidentiality of this data is crucial to mitigate such risks. Additionally, respondents may feel pressured to provide socially desirable responses, impacting the accuracy of the study's findings. To address these risks, it

is essential to uphold ethical standards, guarantee anonymity, and emphasize voluntary participation, minimizing any adverse effects on the respondents.

10. BENEFITS

This study might help Department of Health (DOH) personnel by serving as a valuable resource to enhance their understanding of Digital Eye Strain, its prevention, and the contributing factors to ocular health and academic performance. For student nurses, this research offers a knowledge foundation on Digital Eye Strain and academic performance, aiding in self-awareness and identifying when professional help may be needed. Teachers can benefit from the study's findings, using them as a basis to promote positive behaviors among students, providing social and emotional support to address academic concerns stemming from digital eye strain symptoms. Future researchers will find this study instrumental as it establishes a useful baseline and offers significant insights, providing a starting point for further research on Digital Eye Strain with the potential to broaden the focus of future studies.

11. REIMBURSEMENTS

A certificate of appreciation will be provided to participants as a way to incentivize and recognize their involvement. The certificate will be given to each participant upon completing their participation in the study and will express gratitude for their time, insights, and dedication. By issuing these certificates, the researchers aim is to show their recognition for the participants willingness to share their experiences and perspectives, which greatly contributes to the success of the study. It should be noted that the certificate of appreciation will not have any monetary value nor will it affect the participants' rights to withdraw from the study at any time. Its sole purpose is to express gratitude and recognize their participation.

12. CONFIDENTIALITY

Respondents will be informed of their answers and will be treated with utmost confidentiality. It will not be divulged to anybody and will be solely utilized for research purposes. To maintain anonymity as well as privacy, numbers rather than names of the respondents will be used. At the conclusion of the study, documentation of answers in the questionnaire will be kept by the researcher for safe keeping. These research materials will be disposed of when the results of the study have been disseminated by the researcher. The confidentiality of the information provided by the respondents will be guaranteed, and they will be made aware that it will only be used for research in compliance with R.A. 10173, or the Data Privacy act of 2012.

13. RIGHT TO REFUSE OR WITHDRAW

The participants are free to leave the study at any time with or without a reason, and they have complete control over this privilege. Most importantly, respondents should be properly told that they won't be penalized or lose any rewards if they decide to withdraw. A participant may also request to withdraw if they consistently fail to comply with research guidelines, such as giving false or incomplete information. However, this should be explained in a way that is encouraging rather than forceful. A participant should be deemed ineligible and removed from the study if, throughout the duration of the investigation, they no longer meet the eligibility requirements, such as if they stop being a student nurse at the private institution. In addition, those who are unable to participate in future data collecting because of unanticipated events, including moving or personal emergencies, ought to be regarded as having resigned from the research.

14. DECLARATION OF CONFLICT INTEREST

Declaration of Conflict Interest is not applicable in this study.

15. STORAGE AND DISPOSAL OF RESEARCH DATA/MATERIALS

The ethical conduct of research necessitates the proper disposal of research materials, protecting privacy, being environmentally conscious, and following rules. The researchers will follow a methodical approach that includes putting into practice a comprehensive data management plan aimed at protecting participant privacy through the careful de-identification of sensitive information.

16. SHARING OF RESULTS/DISSEMINATION PLAN

The results of this study will be disseminated and distributed after the analysis, interpretation, and revisions of the study. Confidentiality and anonymity of the respondents will be upheld by avoiding the use of the names of the respondents when the results are discussed. The respondents are allowed to access the results of the study conducted as they wish. They will be provided with all the results pertaining to the study which they are involved in. Moreover, they will be informed in a timely manner if information becomes available.

17. WHO TO CONTACT

If you have any questions or clarifications regarding your participation in the study, you may contact:

Lead Researcher: **DOANE MAXWELL B. DIOSABAN**
 Address: **Datiles St., Brgy. Tiza, Roxas City, Capiz**
 Contact Number: **09399271443**
 Email address: **doanemaxwell.diosaban-18@cpu.edu.ph**

If you have questions pertaining to your rights as a participant, you may contact:

Joy G. Raso, PhD.

Chair, CPU Research Ethics Review Board
 Email: researchethics@cpu.edu.ph
 Phone: 329-1971 (local 3336)

18. CERTIFICATE OF CONSENT

I have read the foregoing information, or it has been read and explained to me in a language/dialect I know and understand. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Print name of participant _____

Signature of participant _____

Date _____

MM/DD/YYYY

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best on my ability made sure that the participant understands that the following will be done.

- 1.
- 2.
- 3.
- 4.

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Print Name of Researcher/person taking the consent _____

Signature of Researcher/ person taking the consent _____

Date: _____

MM/DD/YYYY

Appendix C
Schedule of Activities
Gantt Chart
(2022 – 2024)

Research Activities	Date																		
	Nov. 2022	Dec. 2022	Jan 2023	Feb. 2023	Mar. 2023	April 2023	May 2023	June 2023	July 2023	Aug 2023	Sept. 2023	Oct. 2023	Nov. 2023	Dec. 2023.	Jan. 2024	Feb. 2024	Mar. 2024	April 2024	May 2024
Consultation with Research Adviser																			
Revision of Papers																			
Approval from Adviser																			
Submission for Pre-oral Defense																			
Pre-oral Defense																			
Revision of Papers (Post-Pre Oral)																			
Ethics Review																			
Data Gathering																			
Data Analysis																			
Consultation with Research Adviser																			
Final Oral Defese																			

Appendix D

Budget

ITEM NO.	DETAILS	AMOUNT (in php)
	I.PERSONNEL SERVICES	
1	Validators @ 300/consultation x 3 validators	900
2	Statistician @ 3,000/consulation	3000
3	Grammarian @ 2,000	2000
	Total of Personal Services	5,900
	II. MAINTENANCE AND OTHER OPERATING EXPENSES	
4	Soft Binding	1,000
5	Ethics Review (CPU)	1,500
6	Plagiarism Scan	1,200
7	Printing of Manuscripts and Letters	2,000
8	Book Binding	3,000
9	Transportation	500
	Total of Maintenance and Other Operating Expenses	9,200
	SUMMARY	
	Total for Personnel Services	5,900
	Total for Maintenance and Other Operating Expenses	9,200

Appendix E

Curriculum Vitae



Overview

Name: Jeeyan Grace P. Delgado
Address: Villareal Street Poblacion Proper Mambusao Capiz
Age: 22
Nationality: Filipino
Status: Single
Date of Birth: March 22, 2001
Mobile Number: 09778057553
Email Address: jeeyangrace.delgado-20@cpu.edu.ph

Education

Primary Education:

Mambusao Elementary School

Secondary Education:

Angelicum School Iloilo (Junior High School)

St. Paul University Iloilo (Senior High School)

Tertiary Education:

Central Philippine University - College of Nursing

Relevant Experience

Conducted a study entitled: “**Hugas-Bigas As An Organic Fertilizer to Oregano Plant**”

**Overview**

Name: Liza C. Depra

Address: Ilaya 3rd, Dumangas, Iloilo

Age: 22

Nationality: Filipino

Status: Single

Date of Birth: April 19, 2001

Mobile Number: 09078114325

Email Address: liza.depra-20@cpu.edu.ph

Education**Primary Education:**

St. Augustine Catholic School

Secondary Education:

Dumangas National High School (Junior High School)

Dumangas National High School (Senior High School)

Tertiary Education:

Central Philippine University - College of Nursing

Relevant Experience

Conducted a study entitled: **“The Production of Biodiesel from *Caulerpa lentillifera* extract”** Conducted a study entitled: **“The Antimicrobial Activity of Bignay leaves (*Antidesma Bunius*) extract against *S. Aureus* and *C. Albicans*”**

**Overview**

Name: Rv Jerecho B. Diane
Address: San Isidro Jaro Iloilo city
Age: 21
Nationality: Filipino
Status: Single
Date of Birth: September 18, 2001
Mobile Number: 09455071651
Email Address: Rvjerecho.diane-20@cpu.edu.ph

Education**Primary Education:**

Great Vision Christian Academy

Secondary Education:

Colegio de San Jose (Junior High School)

St. Paul University iloilo (Senior High School)

Tertiary Education:

Central Philippine University - College of Nursing

Relevant Experience

Conducted a study entitled: **REASONS OF SLEEP DEPRIVATION AS EXPERIENCED BY SENIOR HIGH SCHOOL STUDENTS OF SAINT PAUL UNIVERSITY ILOILO FOR ACADEMIC YEAR 2019 -2020**

THE IMPORTANCE OF COMMITMENT TO THE LONG-TERM AND SHORT-TERM RELATIONSHIP OF MARRIED COUPLES IN TODAY'S GENERATION

**Overview**

Name: Doane Maxwell B. Diosaban

Address: Datiles St., Brgy. Tiza, Roxas City, Capiz

Age: 21

Nationality: Filipino

Status: Single

Date of Birth: November 30, 2001

Mobile Number: 09399271443

Email Address: doanemaxwell.diosaban-18@cpu.edu.ph

Education**Primary Education:**

Domingo M. Locsin Elementary School

Secondary Education:

Capiz National high School - Special Science Class (Junior High School)

Central Philippine University (Senior High School)

Tertiary Education:

Central Philippine University - College of Nursing

Relevant Experience

Conducted a study entitled: “**Antibacterial effect of Common Daisy Leaves against Escherichia Coli and Staphylococcus Aureus**”

Conducted a study Entitled: “**Effect of Turmeric (*Curcuma longa*, Linnaeus) Rhizome Crude Extracts on the Germination, Survival, and Growth Rates of Dormant PSB RC82 Rice (*Oryza sativa*, Linnaeus) Seed Variety**”

**Overview**

Name: Nellicon Vale R. Diosanta

Address: Baras, Tacurong City, Sultan Kudarat

Age: 21

Nationality: Filipino

Status: Single

Date of Birth: February 11, 2002

Mobile Number: 09300057724

Email Address: nelliconvale.diosanta-20@cpu.edu.ph

Education**Primary Education:**

Southern Mindanao Institute of Technology

Secondary Education

Notre Dame of Siena College of Tacurong (Junior High School)

Notre Dame of Marbel University- Integrated Basic Education (Senior High School)

Tertiary Education:

Central Philippine University - College of Nursing

Relevant Experience

Conducted a study entitled: **“The Feasibility of Banana Peels as an alternative for the commercial dishwashing soap”**

Conducted a study Entitled: **“Study Habits and Academic Performance of th SMIT Junior High School Students ”**

Conducted a study Entitled: **“A Comparative Study: Cyprinus Carpio (common carp) and Chanos Chanos(milkfish) fish scales as potential fiberglass”**

**Overview**

Name: Rena Mariel A. Dollete

Address: Roxas City, Capiz

Age: 21

Nationality: Filipino

Status: Single

Date of Birth: August 20, 2001

Mobile Number: 09953680565

Email Address: renamariel.dollete-18@cpu.edu.ph

Education**Primary Education:**

College of St. John-Roxas De La Salle Supervised

Secondary Education:

College of St. John-Roxas De La Salle Supervised (Junior High School)

Central Philippine University (Senior High School)

Tertiary Education:

Central Philippine University - College of Nursing

Relevant Experience

Conducted a study entitled: ***“Efficiency of Aloe Vera in the Preservation of Tomatoes”***

Conducted a study entitled: ***“Behavior Manifestation as Influenced by Computer Games Among Students”***

Conducted a study entitled: ***“Factors Affecting the Motivation of Junior High School Students Towards their Studies”***

**Overview**

Name: Paula Jane L. Dumapit

Address: Lambunao, Iloilo

Age: 21

Nationality: Filipino

Status: Single

Date of Birth: April 4, 2002

Mobile Number: 09665093428

Email Address: paulajane.dumapit-18@cpu.edu.ph

Education**Primary Education:**

Don Eugenio Ladrado Memorial Elementary School

Secondary Education:

Lambunao National High School (Junior High School)

Central Philippine University (Senior High School)

Tertiary Education:

Central Philippine University - College of Nursing

Relevant Experience

Conducted a study entitled: **ANTI-BACTERIAL ACTIVITY OF *Mimosa pudica* (Linnaeus, 1753) SHAMEPLANT LEAF AND STEM EXTRACTS TO *Escherichia coli* (Escherich. 1885)**

Appendix F

Technical Approval Sheet



Central Philippine University
Jaro, Iloilo City
College of Nursing
The First Nursing School in the Philippines, 1906
Bachelor of Science in Nursing

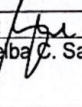

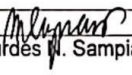



ENDORSEMENT SHEET FOR ETHICS REVIEW (Technical Panel Approval Sheet)

This undergraduate thesis proposal entitled Digital Eye Strain and Academic Performance Among Level 3 Student Nurses in Selected University in Iloilo City prepared and submitted by Jeevan Grace Delgado, Liza C. Depra, Rv Jerecho Diane, Doane Maxwell Diosaban, Nellicon Vale Diosanta, Rena Mariel Dollete and Paula Jane Dumapit in partial fulfillment of the requirements for the degree of BACHELOR OF SCIENCE IN NURSING, has been presented in a Proposal Review on May 25, 2023.

Further, the suggestions and recommendations of the technical panel have been complied with.

This proposal is now recommended for ethical review.

	Panelist  OIC Melba C. Sale	
	Panelist  Prof. Alvin Gastilo, RN	
	Panelist  Prof. Ma. Lourdes W. Sampiano	
	Approved by:	
	 Melba C. Sale MAN, RN OIC Dean/College of Nursing	

Appendix G

Turnitin Similarity Certificate from CPU-RCECC



REVIEW, CONTINUING EDUCATION and CONSULTANCY CENTER

Central Philippine University

Jaro, Iloilo City

Tel. No. 329-1971 local 1008 email: rceccsec@cpu.edu.ph

Website: rcecc.cpu.edu.ph



March 07, 2023

CERTIFICATION

This is to certify that the research proposal entitled “SEVERITY OF DIGITAL EYE STRAIN AND ITS ACADEMIC PERFORMANCE AMONG LEVEL 3 STUDENT NURSES IN A SELECTED UNIVERSITY IN ILOILO CITY” by **Delgado, Jeeyan Grace, Depra, Liza, Diane, Rv Jerecho, Diosaban, Doane Maxwell, Diosanta, Nellcon Vale, Dollete, Rena Mariel, Dumapit, Paula Jane** has undergone Turnitin Similarity Checking with a passing percentage of **14%** and have passed the requirements (Chapter 1-3).

Prepared by:

PINKY E. LUTERO-TONGOL
Staff -in-charged

Approved by:

LENNY ROSE P. MUCHO, EdD.
Director, RCECC

Appendix H
Certificates of Validation



Central Philippine University
College of Nursing
Jaro, Iloilo city

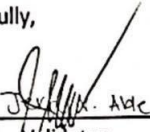
CERTIFICATION OF RESEARCH INSTRUMENT VALIDATION
(QUANTITATIVE RESEARCH)

This is to certify that the study entitled: DIGITAL EYE STRAIN AND ACADEMIC PERFORMANCE AMONG LEVEL 3 STUDENT NURSES IN A SELECTED UNIVERSITY IN ILOILO CITY, has undergone instrument validation. Necessary changes have been checked and approved.

This certification is issued upon the request of the authors: Delgado, Jeeyan Grace P., Depra, Liza C., Diane, Rv Jerecho B., Diosaban, Doane Maxwell B., Diosanta, Nellicon Vale R., Dollete, Rena Mariel A., and Dumapit, Paula Jane L. . As an expert of this subject, I have reviewed the instruments and its contents as to its appropriateness and accuracy based on the problem statement, objectives, conceptual framework, and operational definition of terms.

Issued this 12th day of June, 2023 to the above mentioned student researchers in compliance with their requirements in their research subject.

Respectfully,



Validator
(Printed Name and Signature)



Central Philippine University
College of Nursing
Jaro, Iloilo city

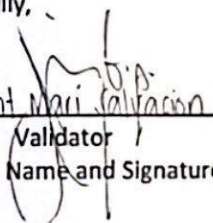
CERTIFICATION OF RESEARCH INSTRUMENT VALIDATION
(QUANTITATIVE RESEARCH)

This is to certify that the study entitled: DIGITAL EYE STRAIN AND ACADEMIC PERFORMANCE AMONG LEVEL 3 STUDENT NURSES IN A SELECTED UNIVERSITY IN ILOILO CITY, has undergone instrument validation. Necessary changes have been checked and approved.

This certification is issued upon the request of the authors: Delgado, Jeeyan Grace P., Depra, Liza C., Diane, Rv Jerecho B., Diosaban, Doane Maxwell B., Diosanta, Nellicon Vale R., Dollete, Rena Mariel A., and Dumapit, Paula Jane L. . As an expert of this subject, I have reviewed the instruments and its contents as to its appropriateness and accuracy based on the problem statement, objectives, conceptual framework, and operational definition of terms.

Issued this 12th day of June, 2023 to the above mentioned student researchers in compliance with their requirements in their research subject.

Respectfully,



Validator
(Printed Name and Signature)



Central Philippine University
College of Nursing
Jaro, Iloilo city

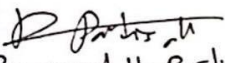
CERTIFICATION OF RESEARCH INSTRUMENT VALIDATION
(QUANTITATIVE RESEARCH)

This is to certify that the study entitled: DIGITAL EYE STRAIN AND ACADEMIC PERFORMANCE AMONG LEVEL 3 STUDENT NURSES IN A SELECTED UNIVERSITY IN ILOILO CITY, has undergone instrument validation. Necessary changes have been checked and approved.

This certification is issued upon the request of the authors: Delgado, Jeeyan Grace P., Depra, Liza C., Diane, Rv Jerecho B., Diosaban, Doane Maxwell B., Diosanta, Nellicon Vale R., Dollete, Rena Mariel A., and Dumapit, Paula Jane L. . As an expert of this subject, I have reviewed the instruments and its contents as to its appropriateness and accuracy based on the problem statement, objectives, conceptual framework, and operational definition of terms.

Issued this 9th day of June, 2023 to the above mentioned student researchers in compliance with their requirements in their research subject.

Respectfully,


Dr. Raymond H. Parkisala
Validator
(Printed Name and Signature)

Appendix I

Letters to Validators



Central Philippine University
Jaro, Iloilo City
College of Nursing
The First Nursing School in the Philippines, 1906
Bachelor of Science in Nursing



June 5, 2023

Dear Dr. Raymund Partisala,

Greetings!

We are Student Nurses from Central Philippine University and its part of our requirements before graduation to conduct a research. Our research is entitled, "Digital Eye Strain and Academic Performance Among Level 3 Student Nurses in a Selected University in Iloilo City", but before we conduct our research, pre-testing is a must to check the validity of our instrument to ensure reliable results.

With this, we opt to get you as one of the validators of our instrument. We believe that your expertise will surely make a difference in the progress of our research.

Thank you.

Sincerely yours,


DOANE MAXWELL DIOSABAN
Research Group Leader


Prof. ADELFA D. DUSARAN
Research Adviser



Central Philippine University
Jaro, Iloilo City
College of Nursing
The First Nursing School in the Philippines, 1906
Bachelor of Science in Nursing



June 9, 2023

Dear Dr. Jacent Salvacion,

Greetings!

We are Student Nurses from Central Philippine University and it's part of our requirements before graduation to conduct research. Our research is entitled, "Digital Eye Strain and Academic Performance Among Level 3 Student Nurses in a Selected University in Iloilo City", but before we conduct our research, pre-testing is a must to check the validity of our instrument to ensure reliable results.

With this, we opt to get you as one of the validators of our instrument. We believe that your expertise will surely make a difference in the progress of our research.

Thank you.

Sincerely yours,


DOANE MAXWELL DIOSABAN
Research Group Leader


Prof. ADELFA D. DUSARAN
Research Adviser



Central Philippine University
Jaro, Iloilo City
College of Nursing
The First Nursing School in the Philippines, 1906
Bachelor of Science in Nursing



June 5, 2023

Dear Prof. Jerry V. Able,

Greetings!


We are Student Nurses from Central Philippine University and it's part of our requirements before graduation to conduct a research. Our research is entitled, "Digital Eye Strain and Academic Performance Among Level 3 Student Nurses in a Selected University in Iloilo City", but before we conduct our research, pre-testing is a must to check the validity of our instrument to ensure reliable results.

With this, we opt to get you as one of the validators of our instrument. We believe that your expertise will surely make a difference in the progress of our research.

Thank you.

Sincerely yours,


DOANE MAXWELL DIOSABAN
Research Group Leader


Prof. ADELFA D. DUSARAN
Research Adviser

Appendix J

Letter to conduct pilot study



CENTRAL PHILIPPINE UNIVERSITY
COLLEGE OF NURSING
The First Nursing School in the Philippines, 1906
Iloilo City, Philippines



February 15, 2024
Prof. Melba C. Sale, MAN
Acting Dean, College of Nursing
Central Philippine University
Jaro, Iloilo City

Dear Prof. Melba C. Sale

Good day. I am writing to seek your permission to conduct a pilot testing for our research study entitled "Digital Eye Strain and Academic Performance Among Level 3 Student Nurses in a Selected University in Iloilo City" as part of our academic pursuits within the College of Nursing. Additionally, I kindly request access to the master list of 3rd year students school year 2022-2023 to obtain a sample for our study.

The purpose of this research study is to determine the digital eye strain and academic performance among level 3 student nurses in a selected University in Iloilo City. The pilot testing is an essential step in refining the research instruments and methodologies before the actual data collection process. This ensures that the final study will yield accurate and valuable results. To carry out the pilot testing effectively, I require access to the master list of 3rd year students enrolled in the College of Nursing school year 2022-2023. This list will enable us to randomly select sample that align with the scope of our research. I assure you that all data obtained will be treated with the utmost confidentiality and in compliance with ethical guidelines.

I understand that permission to access student records is subject to the college's policies and regulations. I am committed to adhering to any guidelines or requirements established by the College in this regard. I will ensure that the data is used exclusively for research purposes and will not be shared or used for any other reasons.


Your support and guidance in this matter are crucial to the success of our research, and I am confident that this project will contribute positively to the academic and research endeavors of the College of Nursing.

Thank you for considering my request. I am looking forward to your positive response.

Respectfully,


Doane Maxwell B. Diosaban
Group Leader

Noted by:


Prof. Adelfa Dusan, MAN
Research Adviser


Prof. Melba C. Sale, MAN
Acting Dean, College of Nursing

Appendix K

Letter for actual data gathering



**CENTRAL PHILIPPINE UNIVERSITY
COLLEGE OF NURSING**
The First Nursing School in the Philippines, 1906
Iloilo City, Philippines



February 15, 2024

Prof. Melba C. Sale, MAN
Acting Dean, College of Nursing
Central Philippine University
Jaro, Iloilo City

Dear Prof. Melba C. Sale

Greetings!

We, the 4th year students and researchers of BSN 4C of Central Philippine University College of Nursing, are currently conducting research entitled, "Digital Eye Strain and Academic Performance Among Level 3 Student Nurses in a Selected University in Iloilo City" in partial fulfillment of the requirements for Nursing Research.

The objectives of the study are as follows:

General Objectives

This study aims to determine the digital eye strain and academic performance among level 3 student nurses in a selected University in Iloilo City.

Specific Objectives:

Specifically, this study aims:

1. Describe the personal profile among the level 3 student nurses in terms of their age, sex, and eye modifiers.
2. Determine the digital eye strain among level 3 student nurses.
3. Determine the academic performance among the level 3 student nurses.
4. Determine whether there is a relationship between the profile in terms of their age, sex, and eye modifiers, and digital eye strain among the level 3 student nurses.
5. Determine whether there is a relationship between the profile in terms of their age, sex, and eye modifiers, and academic performance among level 3 student nurses.

6. Determine whether there is a relationship between digital eye strain and academic performance among level 3 student nurses.


In line with this, we would like to ask permission from your good office to conduct research entitled, "Digital Eye Strain and Academic Performance of Among Level 3 Student Nurses in a Selected University in Iloilo City".

Your favorable response regarding this matter is greatly appreciated. Thank you very much.

Respectfully,


Doane Maxwell B. Diosaban
Group Leader

Noted by:


Prof. Adelfa Dusan, MAN
Research Adviser


Prof. Melba C. Sale, MAN
Acting Dean, College of Nursing

Appendix L
Reliability Test Result

Reliability

Scale: FREQUENCY

Case Processing Summary

		N	%
Cases	Valid	25	100.0
	Excluded ^a	0	.0
	Total	25	100.0

Reliability Statistics

Cronbach's Alpha	N of Items
.707	14

Reliability

Scale: INTENSITY

Case Processing Summary

		N	%
Cases	Valid	25	100.0
	Excluded ^a	0	.0
	Total	25	100.0

Reliability Statistics

Cronbach's Alpha	N of Items
.843	14

Appendix M

Ethical Clearance from CPU-RERB



RESEARCH ETHICS REVIEW BOARD
CENTRAL PHILIPPINE UNIVERSITY
Lopez Jaena St., Jaro, Iloilo City, Philippines
329-1971 to 79 local 3336



ETHICAL CLEARANCE

RERB Form No.22-2
Version No.: 04
Date of Effectivity: 17 May 2023

Date of Approval: January 8, 2024

RERB Code: 2023-396-UG-DIOSABAN et al.

Protocol Title: **"DIGITAL EYE STRAIN AND ACADEMIC PERFORMANCE AMONG LEVEL 3 STUDENT NURSES IN A SELECTED UNIVERSITY IN ILOILO CITY"**

Version No. 02

Researcher/s: **DELGADO, JEEYAN GRACE P.**
DEPRA, LIZA C.
DIANE, RV JERECHO B.
DIOSABAN, DOANE MAXWELL B.
DIOSANTA, NELLICON VALE R.
DOLLETE, RENA MARIEL A.
DUMAPIT, PAULA JANE L.


Upon resubmission of the following documents, Research Proposal Chapters 1, 2, and 3 with references and Informed Consent Form, the above protocol is hereby **APPROVED** by the CPU-RERB. This ethical clearance is valid from **January 08, 2024** to **January 08, 2025**.

The researcher/s are hereby required to submit the following:

- √ Progress Report on or before **February 08, 2024** to researchethics@cpu.edu.ph
- √ Final Report Form and one (1) copy of the completed protocol **within one (1) month** after completion of the study.

For any amendment or alteration in the protocol that will change the nature, or the level of risk involved after approval, the Research Ethics Review Board must be notified through writing and accomplishing the following forms as needed: Protocol Deviation Form, Serious Adverse Events, Amendment Form, and/or Early Termination Report.

Very truly yours,


JOY G. RASO, PhD
Chair, CPU-RERB

Date: 1/8/24

Appendix N
Statistical Data

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21 TO 22	138	80.2	80.2	80.2
	23 TO 25	34	19.8	19.8	100.0
Total		172	100.0	100.0	

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	31	18.0	18.0	18.0
	2.00	141	82.0	82.0	100.0
Total		172	100.0	100.0	

MODIFIER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	56	32.6	32.6	32.6
	2.00	116	67.4	67.4	100.0
Total		172	100.0	100.0	

Frequency Table

F1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	58	33.7	33.7	33.7
	1.00	88	51.2	51.2	84.9
	2.00	24	14.0	14.0	98.8
	3.00	2	1.2	1.2	100.0

Total	172	100.0	100.0
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F2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	48	27.9	27.9	27.9
	1.00	83	48.3	48.3	76.2
	2.00	36	20.9	20.9	97.1
	3.00	5	2.9	2.9	100.0
	Total	172	100.0	100.0	

F3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	77	44.8	44.8	44.8
	1.00	78	45.3	45.3	90.1
	2.00	16	9.3	9.3	99.4
	3.00	1	.6	.6	100.0
	Total	172	100.0	100.0	

F4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	25	14.5	14.5	14.5
	1.00	85	49.4	49.4	64.0
	2.00	50	29.1	29.1	93.0
	3.00	12	7.0	7.0	100.0
	Total	172	100.0	100.0	

F5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	56	32.6	32.6	32.6

1.00	74	43.0	43.0	75.6
2.00	29	16.9	16.9	92.4
3.00	13	7.6	7.6	100.0
Total	172	100.0	100.0	

F6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	64	37.2	37.2	37.2
	1.00	89	51.7	51.7	89.0
	2.00	16	9.3	9.3	98.3
	3.00	3	1.7	1.7	100.0
	Total	172	100.0	100.0	

F7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	44	25.6	25.6	25.6
	1.00	91	52.9	52.9	78.5
	2.00	29	16.9	16.9	95.3
	3.00	8	4.7	4.7	100.0
	Total	172	100.0	100.0	

F8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	42	24.4	24.4	24.4
	1.00	77	44.8	44.8	69.2
	2.00	35	20.3	20.3	89.5
	3.00	18	10.5	10.5	100.0
	Total	172	100.0	100.0	

F9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	41	23.8	23.8	23.8
	1.00	65	37.8	37.8	61.6
	2.00	38	22.1	22.1	83.7
	3.00	28	16.3	16.3	100.0
	Total	172	100.0	100.0	

F10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	99	57.6	57.6	57.6
	1.00	42	24.4	24.4	82.0
	2.00	24	14.0	14.0	95.9
	3.00	7	4.1	4.1	100.0
	Total	172	100.0	100.0	

F11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	77	44.8	44.8	44.8
	1.00	53	30.8	30.8	75.6
	2.00	28	16.3	16.3	91.9
	3.00	14	8.1	8.1	100.0
	Total	172	100.0	100.0	

F12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	42	24.4	24.4	24.4
	1.00	61	35.5	35.5	59.9
	2.00	41	23.8	23.8	83.7
	3.00	28	16.3	16.3	100.0
	Total	172	100.0	100.0	

F13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	48	27.9	27.9	27.9
	1.00	73	42.4	42.4	70.3
	2.00	35	20.3	20.3	90.7
	3.00	16	9.3	9.3	100.0
	Total	172	100.0	100.0	

F14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	29	16.9	16.9	16.9
	1.00	81	47.1	47.1	64.0
	2.00	42	24.4	24.4	88.4
	3.00	20	11.6	11.6	100.0
	Total	172	100.0	100.0	

I1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	119	69.2	69.2	69.2
	1.00	50	29.1	29.1	98.3
	2.00	3	1.7	1.7	100.0
	Total	172	100.0	100.0	

I2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	112	65.1	65.1	65.1
	1.00	53	30.8	30.8	95.9
	2.00	7	4.1	4.1	99.4

	Total	172	100.0	100.0

I3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	128	74.4	74.4	74.4
	1.00	39	22.7	22.7	97.1
	2.00	5	2.9	2.9	100.0
	Total	172	100.0	100.0	

I4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	86	50.0	50.0	50.0
	1.00	73	42.4	42.4	92.4
	2.00	13	7.6	7.6	99.4
	Total	172	100.0	100.0	

I5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	124	72.1	72.1	72.1
	1.00	41	23.8	23.8	95.9
	2.00	7	4.1	4.1	99.4
	Total	172	100.0	100.0	

I6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	123	71.5	71.5	71.5

	1.00	43	25.0	25.0	96.5
	2.00	6	3.5	3.5	98.8
	Total	172	100.0	100.0	

17

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	109	63.4	63.4	63.4
	1.00	49	28.5	28.5	91.9
	2.00	14	8.2	8.2	98.8
	Total	172	100.0	100.0	

18

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	100	58.1	58.1	58.1
	1.00	55	32.0	32.0	90.1
	2.00	17	9.9	9.9	98.8
	Total	172	100.0	100.0	

19

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	93	54.1	54.1	54.1
	1.00	67	39.0	39.0	93.0
	2.00	12	7.0	7.0	100.0
	Total	172	100.0	100.0	

I10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	127	73.8	73.8	73.8
	1.00	38	22.1	22.1	95.9
	2.00	7	4.1	4.1	98.8
	Total	172	100.0	100.0	

I11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	117	68.0	68.0	68.0
	1.00	46	26.7	26.7	94.8
	2.00	9	5.2	5.2	100.0
	Total	172	100.0	100.0	

I12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	71	41.3	41.3	41.3
	1.00	70	40.7	40.7	82.0
	2.00	31	18.1	18.1	98.8
	Total	172	100.0	100.0	

I13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	96	55.8	55.8	55.8
	1.00	57	33.1	33.1	89.0
	2.00	19	11.1	11.1	99.4
	Total				

Total	172	100.0	100.0
-------	-----	-------	-------

I14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	71	41.3	41.3	41.3
	1.00	75	43.6	43.6	84.9
	2.00	26	15.1	15.1	97.7
	Total	172	100.0	100.0	

DIGITAL EYESTRAIN

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4 OR BELOW	68	39.5	39.5	39.5
	5 TO 15	52	30.2	30.2	69.8
	16 OR ABOVE	52	30.2	30.2	100.0
Total		172	100.0	100.0	

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
DES	172	.00	47.00	11.3488	11.71970

ACADEMIC PERFORMANCE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.55 OR BELOW	64	37.2	37.2	37.2
	1.56 TO 1.84	72	41.9	41.9	79.1
	1.85 OR ABOVE	36	20.9	20.9	100.0
Total		172	100.0	100.0	

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ACADEMIC PERFORMANCE	172	1.23	2.89	1.7012	.29396

AGE * DIGITAL EYESTRAIN Crosstabulation

		DIGITAL EYESTRAIN			Total	
		4 OR BELOW	5 TO 15	16 OR ABOVE		
AGE	21 TO 22	Count	53	44	41	138
		% within AGE	38.4%	31.9%	29.7%	100.0%
	23 TO 25	Count	15	8	11	34
		% within AGE	44.1%	23.5%	32.4%	100.0%
Total		Count	68	52	52	172
		% within AGE	39.5%	30.2%	30.2%	100.0%

Symmetric Measures

		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Ordinal by Ordinal	Gamma	-.036	.163	-.222	.824
N of Valid Cases		172			

SEX * DIGITAL EYESTRAIN Crosstabulation

		DIGITAL EYESTRAIN			Total	
		4 OR BELOW	5 TO 15	16 OR ABOVE		
SEX	1.00	Count	19	9	3	31
		% within SEX	61.3%	29.0%	9.7%	100.0%
	2.00	Count	49	43	49	141
		% within SEX	34.8%	30.5%	34.8%	100.0%
Total		Count	68	52	52	172
		% within SEX	39.5%	30.2%	30.2%	100.0%

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.339	.007
	Cramer's V	.339	.007
N of Valid Cases		172	

MODIFIER * DIGITAL EYESTRAIN Crosstabulation

		DIGITAL EYESTRAIN				
		4 OR BELOW	5 TO 15	16 OR ABOVE	Total	
MODIFIER	1.00	Count	29	15	12	56
		% within MODIFIER	51.8%	26.8%	21.4%	100.0%
	2.00	Count	39	37	40	116
		% within MODIFIER	33.6%	31.9%	34.5%	100.0%
Total		Count	68	52	52	172
		% within MODIFIER	39.5%	30.2%	30.2%	100.0%

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.281	.031
	Cramer's V	.281	.031
N of Valid Cases		172	

AGE * ACADEMIC PERFORMANCE Crosstabulation

		ACADEMIC PERFORMANCE				
		1.55 OR BELOW	1.56 TO 1.84	1.85 OR ABOVE	Total	
AGE	21 TO 22	Count	56	52	30	138
		% within AGE	40.6%	37.7%	21.7%	100.0%
	23 TO 25	Count	8	20	6	34
		% within AGE	23.5%	58.8%	17.6%	100.0%
Total		Count	64	72	36	172
		% within AGE	37.2%	41.9%	20.9%	100.0%

Symmetric Measures

		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Ordinal by Ordinal	Gamma	.169	.142	1.166	.244
N of Valid Cases		172			

SEX * ACADEMIC PERFORMANCE Crosstabulation

		ACADEMIC PERFORMANCE				
		1.55 OR BELOW	1.56 TO 1.84	1.85 OR ABOVE	Total	
SEX	1.00	Count	9	16	6	31
		% within SEX	29.0%	51.6%	19.4%	100.0%
	2.00	Count	55	56	30	141
		% within SEX	39.0%	39.7%	21.3%	100.0%
Total		Count	64	72	36	172
		% within SEX	37.2%	41.9%	20.9%	100.0%

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.096	.453
	Cramer's V	.096	.453
N of Valid Cases		172	

MODIFIER * ACADEMIC PERFORMANCE Crosstabulation

		ACADEMIC PERFORMANCE				
		1.55 OR BELOW	1.56 TO 1.84	1.85 OR ABOVE	Total	
MODIFIER	1.00	Count	19	24	13	56
		% within MODIFIER	33.9%	42.9%	23.2%	100.0%
	2.00	Count	45	48	23	116
		% within MODIFIER	38.8%	41.4%	19.8%	100.0%
Total		Count	64	72	36	172
		% within MODIFIER	37.2%	41.9%	20.9%	100.0%

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.052	.792

Cramer's V	.052	.792
N of Valid Cases	172	

DIGITAL EYESTRAIN * ACADEMIC PERFORMANCE Crosstabulation

			ACADEMIC PERFORMANCE			
			1.55 OR BELOW	1.56 TO 1.84	1.85 OR ABOVE	Total
DIGITAL EYESTRAIN	4 OR BELOW	Count	30	27	11	68
		% within DIGITAL EYESTRAIN	44.1%	39.7%	16.2%	100.0%
	5 TO 15	Count	17	25	10	52
		% within DIGITAL EYESTRAIN	32.7%	48.1%	19.2%	100.0%
	16 OR ABOVE	Count	17	20	15	52
		% within DIGITAL EYESTRAIN	32.7%	38.5%	28.8%	100.0%
Total	Count	64	72	36	172	
	% within DIGITAL EYESTRAIN	37.2%	41.9%	20.9%	100.0%	

Correlations

			DES	AP
Spearman's rho	DES	Correlation Coefficient	1.000	-.441
		Sig. (2-tailed)	.	.035
		N	172	172
	AP	Correlation Coefficient	-.441	1.000
		Sig. (2-tailed)	.035	.
		N	172	172

Appendix O

Certificate of Statistician



CENTRAL PHILIPPINE UNIVERSITY
Jaro, Iloilo City, Philippines



STATISTICIAN'S CERTIFICATION

This is to certify that this research study entitled, Digital Eye Strain and Academic Performance among Level 3 Student Nurses at a Selected University in Iloilo City and submitted by DELGADO, Jeeyan Grace P., DEPRA, Liza C., DIANE, Rv Jerecho B., DIOSABAN, Doane Maxwell B., DIOSANTA, Nellicon Vale R., DOLLETE, Rena Mariel A., DUMAPIT, Paula Jane L..

For the degree of Bachelor of Science in Nursing is certified to have undergone statistical analysis and reviewed by the undersigned.

Issued this 11th day of June 11, 2024, Central Philippine University, Jaro, Iloilo City, Philippines.


PROF. TONY RAVA A. CANAMAN, MAED

Statistician

Appendix P

Turnitin Similarity Certificate from CPU-RCECC



CENTRAL PHILIPPINE UNIVERSITY
REVIEW, CONTINUING EDUCATION and CONSULTANCY CENTER
Jaro, Iloilo City
Tel. No. 329-1971 local 1008 email: rceccsec@cpu.edu.ph
Website: rcecc.cpu.edu.ph

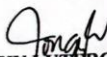


June 07, 2024

CERTIFICATION

This is to certify that the paper entitled "Digital Eye Strain and Academic Performance among Level 3 Student Nurses in a Selected University in Iloilo City" by Delgado, Jeeyan Grace P., Depra, Liza C., Diane, Rv Jerecho B., Diosaban, Doane Maxwell B., Diosanta, Nellicon Vale R., Dollete, Rena Mariel A., and Dumapit, Paula Jane L. had undergone Turnitin Similarity Checking with a passing percentage of 16% and had passed the requirements (Chapter 1-5).

Prepared by:


PINKY LUTERO-TONGOL
Staff-in-Charge

Appendix Q**Certification of Grammar and Other Mechanics of Writing**

COLLEGE OF ARTS AND SCIENCES
CENTRAL PHILIPPINE UNIVERSITY
Department of Languages, Mass Communication, and Humanities

CERTIFICATION



This is to certify that the research entitled **Digital Eye Strain and Academic Performance among Level 3 Student Nurses at a Selected University in Iloilo City** by *DELGADO, Jeeyan Grace P., DEPRA, Liza C., DIANE, Rv Jerecho B., DIOSABAN, Doane Maxwell B., DIOSANTA, Nellicon Vale R., DOLLETE, Rena Mariel A., and DUMAPIT, Paula Jane L.* was checked and verified for grammar and other mechanics of writing.

Issued this 8th of June, 2024.

RHYS DE LA BANDA CAMACHO, MA English (major in TESOL)
DLMCH Faculty
This University

Appendix R

RERB DECISION FORM

 RESEARCH ETHICS REVIEW BOARD CENTRAL PHILIPPINE UNIVERSITY Lopez Jaena St., Jaro, Iloilo City, Philippines 329-1971 to 79 local 3336	
DECISION FORM	RERB Form No. 22-1 Version No. 04 Date of Effectivity: 17 May 2023

Date: November 20, 2023

NAME OF PROPONENT: **DELGADO, JEEYAN GRACE P.**
DEPRA, LIZA C.
DIANE, RV JERECHO B.
DIOSABAN, DOANE MAXWELL B.
DIOSANTA, NELLICON VALE R.
DOLLETE, RENA MARIEL A.
DUMAPIT, PAULA JANE L.

Institution: CENTRAL PHILIPPINE UNIVERSITY

Re: **"DIGITAL EYE STRAIN AND ACADEMIC PERFORMANCE AMONG LEVEL 3 STUDENT NURSES IN A SELECTED UNIVERSITY IN ILOILO CITY"**

RERB code: 2023-396-UG-DIOSABAN et al.

Dear Mr/Ms. Diosaban,

This is to acknowledge receipt of your request and the following supporting documents dated **October 20, 2023**:

1. Letter of application for research ethics review addressed to CPU- RERB Chair
2. Accomplished RERB Application (Form 07-1)
3. Full protocol/Research proposal (Chapters 1, 2 and 3) with references.
4. Validated Research Instrument/Questionnaire for Quantitative Research
5. Certificate of Validation for researcher-made questionnaire preferably from (3) three experts in the field, not by the adviser and panel members
6. Informed Consent Form (CPU-RERB template)
7. Certificate of Technical Review/Approval sheet of proposal signed by (3) three members of the technical panel and the Dean
8. Turnitin Similarity Certificate from CPU-RCECC
9. Budget
10. Curriculum Vitae/Resume of the Researcher/Investigator and Co-Researchers with 2x2 photograph
11. GANTT Chart/Timelines/Table of schedule
12. Two (2) Hard Copies (*Soft Bound in Blue or Black cover*) of the above documents placed inside a long clear plastic envelope
13. Soft Copy of the above documents emailed to researchethics@cpu.edu.ph

The above documents underwent **Expedited Review** which generated the following list of recommendations:

1. For clarification, In objectives and statement of the problem, what do you mean by 'profile?'. Please specify. I am also concerned as to how

CS Scanned with CamScanner

- This form contains the CPU-RERB recommendations. Please comply within ten (10) days and wait for the Ethical Clearance before the conduct of the study.

you will correlate 'profile' and academic performance given correlation entails both variables be the same level of measurement, unless you will be using chi-square?



2. On the definition of terms, avoid using 'wikis' as source of definitions. Also for measuring the variables, please provide their 'levels' and their interpretation and the tool that will measure it.
3. In RRL, kindly properly cite sources as some sources do not have dates or years. Kindly also properly rewrite your references Also add more review of related literature
4. Kindly provide more information of the said tests you will be using; its name, year published, psychometric properties. This is to ensure that the tests used are not obsolete and are psychometrically sound. There is not made mention of any specific statistical tools to be used for inferential statistics e.g.: t-test? Kindly explain what is Gamma Correlation and how it is going to be used
5. Indicate duration of the study in the scope and limitation refer to your Gantt chart.
6. On the target population state clearly the inclusion and exclusion criteria include the year level, age and sex of your respondents
7. Revise the Ethical Consideration in Chapter 3. It should be written after Research Instrument. The following is the content of Ethical Consideration, discuss as a sub-paragraph.
 - Seeking approval from the RERB office and other related offices/institution*
 - prior to the conduct of the study
 - Risk Assessment*
 - identify research related –risk based on the following categories: negligible, low, minimal, more than minimal, and high risk) and discuss how to mitigate the identified risk.
 - Benefits assessment*
 - should be summarized to make it more comprehensive to your respondents.
 - Withdrawal criteria of participants*
 - state withdrawal criteria
 - Anonymity and confidentiality of participants/respondents*
 - discuss how to anonymize & keep the confidentiality of your respondents
 - Voluntary, non-coercive recruitment of participants/respondents*
 - provide statement on voluntary & non-coercive recruitment
 - Disposal of research materials/data*
 - discuss how to dispose research materials
 - Contribution to local capacity building and benefits to local communities*
 - discuss possible contribution of your study
 - Incentives or compensation for participants*
 - provide statement on giving of incentives
 - Disclosure or declaration of potential conflict of interest*
 - provide statement on declaration of potential conflict of interest

Note: Content in the Ethical consideration should be aligned with ICF
8. On ICF:
 - a. Remove Instructions to Researchers
 - b. #2, delete the last paragraph – The researcher's aim....
 - c. #3, remove specific objectives and the last paragraph – The results of this study.....



Appendix S

RERB Resubmission Form

 RESEARCH ETHICS REVIEW BOARD CENTRAL PHILIPPINE UNIVERSITY Lopez Jaena St., Jaro, Iloilo City, Philippines 329-1971 to 79 local 3336			
RESUBMISSION FORM		RERB Form No. 08-1	
		Version No. 03	
		Date of Effectivity: 17 May 2023	

INSTRUCTION TO THE RESEARCHER/s: This form shall be filled-out by the researcher upon receipt of the Decision form. Obtain an electronic copy of this form and provide the information required in the space provided. This form shall be signed by the researcher and adviser before submission to rec-resubmission@cpu.edu.ph

GENERAL INFORMATION				
Title of the Study	"DIGITAL EYE STRAIN AND ACADEMIC PERFORMANCE AMONG LEVEL 3 STUDENT NURSES IN A SELECTED UNIVERSITY IN ILOILO CITY"			
Version number/Date	Version No. 4 December 1, 2023			
RERB Code	2023-396-UG-Diosaban et al.	Study Site:	Central Philippine University	
Name of Researcher	Doane Maxwell B. Diosaban	Contact Information	Tel No.	
Co-researcher (if any)	Jeeyan Grace P. Delgado, Liza C. Depra, Rv Jerecho B. Diane, Nellicon Vale R. Diosanta, Rena Mariel A. Dollete, Paula Jane L. Dumapit		Mobile No.	09399271443
			Fax No.	
			Email: doanemaxwell.diosaban-18@cpu.edu.ph	
Institution of researcher/s	Central Philippine University			
Address of Institution	Lopez Jaena St., Jaro, Iloilo City, 5000			

RERB Recommendations	Response of Researcher	Section and page number of revisions
In objectives and state of the problem, what do you mean by profile? Please Specify.	Revised statement of the problem by specifying the variable "profile"	Objectives of the study and hypotheses Page 3 – 5
On the definition of terms, avoid using 'wikis' as source of definitions. Also for measuring the variables, please provide their 'levels' and their interpretation and the tool that will measure it.	Revised the sources of definitions with provided 'levels' and their interpretation and the tool that will measure it. (Academic Performance, Age, Digital Eye Strain, Eye Modifier, Intensity, Frequency and Sex)	Operational Definition of Variables Page 7 - 11
Kindly also properly cite sources as some sources do not have dates or years. Also add more review of related literature.	Cited sources properly and added more review of related literatures.	Review of Related Literature Page 13 - 19

Provide more information of said tests you will be using; its name, year published, psychometric properties. This is to ensure that the tests used are not obsolete and are psychometrically sound.	Revised the Data Processing and Statistical Analysis	Data Processing and Statistical Analysis Page 30 - 31
Indicate duration of the study in the scope and limitation refer to your Gantt Chart	Revised the duration of the study in the Gantt Chart and Scope and limitation	Scope and limitation And Gantt Chart Page 12 & 57
On the target population state clearly the inclusion and exclusion criteria include the year level, age and sex of your respondents	Revised target population (inclusion and exclusion criteria with year level, age and sex of respondents)	Target population and Sampling Technique Page 20
Revise the Ethical Consideration in Chapter 3 It should be written after the Research Instrument.	Revised Ethical Consideration (Seeking Approval from the RERB office and other related offices/institution, Risk Assessment, Benefits Assessment, Withdrawal Criteria of Participants, Anonymity and Confidentiality of Participants/Respondents, Voluntary, Non-coercive recruitment of Participants/Respondents, Disposal of Research Materials/Data, Contribution to local capacity building and benefits to local Communities, Incentives or Compensation for Participants, and Disclosure or Declaration of Potential Conflict of Interest) Ethical Consideration was written after Research Instrument.	Ethical Consideration Page 24 - 28
On ICF: 1. Remove Instructions to Researchers 2. #2, delete the last paragraph - The researcher's aim... 3. #3, remove specific objectives and the last paragraph - The results of this study....	Removed suggested parts and revised the content of ICF aligning with the Ethical Considerations.	Revised Informed Consent Form

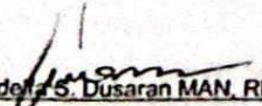
Researcher/s:


DOANE MAXWEL B. DIOSDADO

Signature over Printed Name

Date: December 1, 2023



Adviser:


Adela S. Dusaran MAN, RN
Research Adviser

Date: December 1, 2023

Appendix T

RERB Protocol Review of Progress Report

	RESEARCH ETHICS REVIEW BOARD CENTRAL PHILIPPINE UNIVERSITY Lopez Jaena St., Jaro, Iloilo City, Philippines 329-1971 to 79 local 3336	
PROTOCOL REVIEW OF PROGRESS REPORT	RERB Form No. 09-1	
	Version No. 01	
	Date of Effectivity: 17 May 2023	

INSTRUCTIONS TO THE RESEARCHER/s:

This form is required thirty (30) days after your Data Collection. Obtain an electronic copy of this form and supply

All information required in the space provided. This form shall be signed by the researcher and adviser before submission to researchethics@cpu.edu.ph

GENERAL INFORMATION

Title of Study	DIGITAL EYE STRAIN AND ACADEMIC PERFORMANCE AMONG LEVEL 3 STUDENT NURSES IN A SELECTED UNIVERSITY IN ILOILO		
RERB Protocol No.	2023-396-UG-Diosaban et al.	Study Site	CENTRAL PHILIPPINE UNIVERSITY
Name of Researcher	DOANE MAXWELL B. DIOSABAN		
Contact No.	09399271443	Email Address	doanemaxwell.diosaban-18@cpu.edu.ph
Co-researcher (if any)	Jeeyan Grace P. Delgado, Liza C. Depra, Rv Jerecho B. Diane, Nellicon Vale R. Diosanta, Rena Mariel A. Dollete, Paula Jane L. Dumapit		

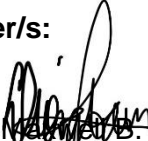
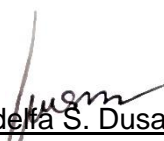
Institution	CENTRAL PHILIPPINE UNIVERSITY
Address of Institution	JARO, ILOILO CITY

Recommendations (For RERB use only)



Ethical clearance effectivity period:	JANUARY 8, 2025
---------------------------------------	-----------------

PROGRESS REPORT

1. Start of study: March 20, 2024
2. Expected end of study: April 30
3. Number of enrolled participants: 172
4. Number of required participants: 172
5. Number of participants who withdrew: 0
6. Deviations from the approved protocol: None
7. New Information (Literature or in the conduct of the study) that may significantly change the risk benefit ratio: None
8. Issues/problems encountered: Problems encountered regarding the formula to solve Digital Eye Strain Symptom which delayed our result computation and minimal modification of questionnaire.

DECISION: (For RERB use only)	<input type="checkbox"/> Ask for further information <input type="checkbox"/> Noted and Accept report
Comments of Primary Reviewer (For RERB use only)	
RERB Primary Reviewer: (For RERB use only)	
<hr/> Signature over Printed Name	
Date:	
Researcher/s:  Doane W. Williams - Diosaban	
<hr/> Signature Over Printed Name	
Date: April 17, 2024	
Adviser:  Adelfa S. Dusan	
<hr/> Signature Over Printed Name	
Date: April 17, 2024	

Appendix U
RERB Final Report

 <div style="text-align: center;"> <p>RESEARCH ETHICS REVIEW BOARD CENTRAL PHILIPPINE UNIVERSITY Lopez Jaena St., Jaro, Iloilo City, Philippines 329-1971 to 79 local 3336</p> </div> 	RERB Form No. 13-1 Version No. 01 Date of Effectivity: 17 May 2023
FINAL REPORT FORM	

INSTRUCTIONS TO THE RESEARCHER/s:

This form is required upon completion of the study. Obtain an electronic copy of this form and supply

all information required in the space provided. This form shall be signed by the researcher and adviser before submission to researchethics@cpu.edu.ph

GENERAL INFORMATION

RERB Protocol Number	2023-396-UG-Diosaban et al.	Date (DD/MM/YYYY)	11/06/2024
Protocol Title	DIGITAL EYE STRAIN AND ACADEMIC PERFORMANCE AMONG LEVEL 3 STUDENT NURSES IN A SELECTED UNIVERSITY IN ILOILO		
Principal Investigator/s	Doane Maxwell B. Diosaban		
Department/College	College of Nursing		
Contact No.	09399271443	*Email Address	doanemaxwell.diosaban-18@cpu.edu.ph
Co-investigator/s (if any)	Jeeyan Grace P. Delgado, Liza C. Depra, Rv Jerecho B. Diane, Nellicon Vale R. Diosanta, Rena Mariel A. Dollete, Paula Jane L. Dumapit		
Contact No.	09171423449 09078114325 09455071651 09300057724 09953680565 09159980268	Email Address	jeeyangrace.delgado-20@cpu.edu.ph liza.depra-20@cpu.edu.ph rvjerecho.diane-20@cpu.edu.ph nelliconvale.diosanta-20@cpu.edu.ph renamariel.dollete-18@cpu.edu.ph paulajane.dumapit-18@cpu.edu.ph

Institution of Researcher/s	College of Nursing
Address of Institution	Jaro, Iloilo City
Effective period of Ethical Clearance	From: <u>January 08, 2024</u> To: <u>January 08, 2025</u>
(*for RERB) Primary Reviewer/s	
Type of Study	<input type="checkbox"/> Clinical <input type="checkbox"/> Epidemiology <input type="checkbox"/> Observational study <input type="checkbox"/> Document Review <input type="checkbox"/> Individual based <input type="checkbox"/> Genetic <input checked="" type="checkbox"/> Social Survey <input type="checkbox"/> Others, specify _____
Review Status	<input type="checkbox"/> Full Board <input checked="" type="checkbox"/> Expedited

FINAL REPORT

1. Start/end of the Study: November 2022 – May 2024
2. Number of enrolled participants: May 17, 2024
3. Number of required participants: 172
4. Number of participants who withdraw: 0
5. Deviations from the approved protocol: None
6. Issues/problems encountered: Problems encountered regarding the formula to solve Digital Eye Strain Symptom that delayed our result computation and minimal modification of questionnaire.
7. Summary of findings:
1. The majority of the respondents (80.2%, n = 138) were aged 21 to 22 years old. Females comprised the majority of respondents (82%, n = 141), and 64.7% (n = 116) of respondents had eye modifiers.
2. Based on the 28- item questionnaire adapted from Segui's Computer Vision Syndrome

Questionnaire that was classified into two categories: Frequency and Intensity given, the majority of the students (39.5%) have below average digital eye strain.

3. The mean score (11.3488) for the level of Digital Eye Strain by the student is below average.

4. Based on the GWA of nursing students on their first two years of college. Most of the students (41.9%) have average academic performance.

5. The mean score for the Academic performance of the nursing students shows (1.7012).

6. Based on the Frequency part of the questionnaire given revealed that 11.6% of respondents noted headaches as "always", while 29.1% of the respondents noted tearing as "often". Additionally, 52.9% reported "occasionally" for eye pain, indicating a significant portion of participants experiencing discomfort. 57.6% of respondents reported "never" for double vision.

7. According to the intensity section of the questionnaire, it was found that 18.1% of the participants described Increased Sensitivity to Light as "intense," while 42.4% reported headache as "moderate." Furthermore, a significant proportion of respondents (74%) indicated a "low" level of feeling of foreign body, suggesting that many participants experienced discomfort.

8. There is a weak association between Age and DES. Hence, there is no significant relationship between Age and Digital Eye Strain.

9. There is a strong association between Sex and Digital Eye Strain of the respondents. Therefore, there is a significant relationship between sex and digital eye strain.

10. There is a moderate association between eye modifier and digital eye strain of the respondent. Hence, there is a significant relationship between eye modifier and digital eye strain.

11. There is a weak association between Age and Academic Performance. Therefore, there is No significant relationship between Age and Academic Performance.

12. There is a weak association between Sex and Academic Performance. Thus, there is no significant relationship between Sex and Academic Performance.

13. There is a weak association between Eye modifier and Academic Performance. Therefore,

there is no significant relationship between Eye modifier and Academic performance.

14. There is an inverse or strong relationship between Digital Eye Strain and Academic performance of the student nurses. Thus, there was a significant relationship between Academic performance and Digital eye strain.

8. Conclusions/Recommendations:

Conclusions:

Based on the data analysis and findings, the researchers concluded that there was no significant relationship between age and digital eye strain among student nurses in a selected private university. However, significant relationships were identified between sex and digital eye strain, as well as between eye modifiers and digital eye strain, among these student nurses. Conversely, age, sex, and eye modifiers did not exhibit a significant relationship with academic performance. Importantly, digital eye strain was found to have a significant relationship with the academic performance of level 3 student nurses in a selected private university in Iloilo City.

Recommendations:

6. The findings of this study shall be given to the governing bodies in the education to incorporate eye health education modules into the curriculum to raise awareness among student nurses about the importance of regular eye care practices and potential impact of digital eye strain on academic performance. The goal is to encourage the incorporation of eye health education modules into the existing curriculum. By doing so, we aim to raise awareness among student nurses about critical importance of regular eye care practice.
7. The study's findings shall be shared with healthcare and educational establishments to encourage collaboration among health professionals, educators, students, and researchers. This collaboration aims to facilitate interdisciplinary discussions, exchange of

knowledge, and formation of partnerships, thereby improving the quality and effectiveness of future research and interventions. By collaborating, we create a diverse range of knowledge and idea that can greatly improve understanding in this field.

8. Nursing schools should collaborate with eye care professionals to develop and implement specific programs aimed at educating students about digital eye strain prevention, such as proper eye exercises, screen time management and ergonomic workstation setups. This collaboration is important in creating a curriculum that gives knowledge and skills that nursing students must do to protect and maintain their eye healthcare.
9. Future studies should explore the long-term effects of digital eye strain on academic performance and overall well-being among student nurses, considering factors such as duration of screen time, lighting conditions, and individual susceptibility to eye strain. This will promote student nurses' academic performance and well-being.
10. The study findings indicate the prevalence of digital eye strain among nursing students. It is imperative to prioritize continuous monitoring of digital eye strain levels among students in the future. By making continuous monitoring a priority, universities can ensure a proactive approach to managing digital eye strain among nursing students and promote long-term eye health and academic success.

9. Actions for dissemination of study results:

The plan for disseminating this research study involves responsibly sharing the findings with various beneficiaries. The researchers intend to publish the results in peer-reviewed academic journals to contribute to the scholarly discourse in nursing education and decision-making. Additionally, they plan to present the study at conferences and seminars to engage with the academic community. The researchers also aim to make the results available online for other researchers in the same field. Throughout the dissemination process, the research team is dedicated to maintaining scientific rigor and ethical responsibility, ensuring the results are shared without bias or distortion.