Arab American University
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Self-efficacy, Stress, and Coping Mechanisms of

Undergraduate Nursing Students:

Assessing the Impact of Clinical Training During the

COVID-19 Pandemic on Their Perceptions

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Thesis Approval

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Declaration

I certify that this thesis submitted for the degree of master is the result of my research, except where otherwise acknowledged, and that this thesis (or any part of the same material) has not been submitted for a higher degree to any other university or institution.

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Dedication

I dedicate this humble work to my country, Palestine.

To my beloved children, I wish to be your kind mother, role model, and constant

support.

To my dear friends, Dr. Abeer Hussein and Dr. Imad Abu Khader, for their great

support during my education. Without their support, I couldn't be here today.

To my colleagues and friends at Al-Makassed Charitable Hospital.

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Abstract

Background: The application of the theoretical nursing curriculum in the bachelor's degree program is largely dependent on the clinical training that nursing students get. Students' clinical experiences were altered by the COVID-19 outbreak circumstances, which forced them into new clinical learning environments and increased the burden of academic responsibilities.

Objective: The main objective of this study is to assess self –efficacy, Stress and Coping Behaviors among undergraduate Nursing students and their perceived Impact of clinical training during the COVID-19 Pandemic

Method: A descriptive cross-sectional design, with 93 participants. Questionnaire used had five sections. The first section was about Demographic data of nursing students. The second section: Student Perception of the Clinical learning during COVID 19 pandemic.

The third section: The self-efficacy scale adopted from: (Ulenaers, D, et al 2021). The fourth section was The Perceived Stress Score (PSS) adopted from (Sheu et al. 1997). The fifth section was The Coping Behavior Scale (CBS) by (Sheu et al., 2002).

Result: The analysis revealed that most of the participants 82 (88.2%) had a negative perception of clinical learning during the COVID-19 pandemic. Students felt less confident about Observation and monitoring of patients with respiratory infections (M= 61.2 ± 27.8, 32.3% 75+ score). Students felt least confident about Observation and monitoring of ventilated patients (mean 58.5± 27.8, 26.9% 75+ score). According to the Coping Behavior Inventory (CBI), participants 'mean coping behavior was (M = 40.08±10.54). Additionally, stress score mean was high (62.2±23.6) Also. The analysis revealed that there is correlation between perceived stress and avoidance, problem

solving, and transference as coping behaviors (P<0.5). There is positive small correlation between perceived clinical practice and self-efficacy (P<0.5).

Conclusion: This study has shown that most nursing students have negatively perceived the impact of the COVID-19 pandemic on clinical training. Their stress score was high, major stress was from taking care of patients, Students felt least confident about Observation and monitoring of ventilated patients, while their use of coping behaviors was also high especially the use of problem solving.

Key words: COVID-19 Pandemic, clinical training, nursing students, perception, self-efficacy, stress, coping behaviors.

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List of Abbreviations

1- COVID-19	1- Coronavirus Disease of 2019.
2- SPSS	2- Statistical Package for the Social Sciences.
3- p-values	3- The probability.
4- WHO	4- World Health Organization.
5- moh.ps	5- Ministry of Palestinian health.
6- PPE	6- Personal Protective Equipment.
7- STROBE	7- Strengthening the Reporting of Observational Studies in Epidemiology.
8- BSc	8- Bachelor of Science.
9- COREQ	9- Consolidated criteria for reporting qualitative research.
10- AUP	10- Arab American University Palestine.
11- PSS	11- Perceived Stress Scale.
12- CBI	12- Coping Behavior Inventory.
14- ANOVA	13- Analysis of variance.
15- T tests	14- Hypothesis Test Statistic.
16- LSD	15- Using values from the output of the ANOVA, we can calculate Fisher's test statistic as: $LSD = t_{.025,\ DFw} * \sqrt{MS_W} (1/n_1 + 1/n_1)$.

Chapter One: Introduction

1.1 Background

Students' self-perception, ability to learn, and competency can all suffer from ineffective coping (Grobecker, 2016). Fear predictors were used by several coping techniques. The mental well-being of students was predicted by their fear, the presence of many coping strategies, and acquaintance with a COVID-19-infected person. The students were worried about contracting COVID-19 and had a moderate perception of risk. "Religion" was mentioned as a way to cope most often used (Allais, 2021). Acceptance and a religious or spiritual approach were the most popular coping mechanisms (Rykkje et al., 2022).

Global transmission of the COVID-19 virus has been ongoing since Chinese authorities notified the WHO of many instances of pneumonia whose causes remain unclear in Wuhan on December 31, 2019 (WHO, 2019). Before reaching the Americas, Africa, Oceania, and Europe, the new coronavirus COVID-19 rapidly spread throughout China and other Asian nations (Abbasi et al., 2020). The coronavirus disease of 2019 (COVID-19) had a significant detrimental effect on higher education worldwide, as seen by the shutdown of colleges in reaction to lockdown protocols (Andreas, 2020).

On March 5, 2020, the coronavirus (COVID-19) was discovered in Palestine. The Palestinian President declared an emergency right away, encompassing both the West Bank and the Gaza Strip. Consequently, educational establishments and other structured locations were shut down (Abu-El-Noor, 2021).

Students are expected to acquire information, attitudes, and abilities in the cognitive, emotional, and psychomotor domains through nursing education, which encompasses both theoretical and clinical education procedures (Akansel et al., 2022; Nabavian et al.,

2021). Engagement, involvement, teamwork, critical thinking, clinical environments, and competent clinical teachers are all necessary for clinical learning. Nursing students anticipate working in clinical settings and want to be actively involved in their education (Hunter & Arthur, 2016). Students suggested that seeing or doing demonstrations was the greatest way to learn a skill and that taking notes, participating in class, and observing demonstrations were the best ways to study a topic (Cowen et al., 2019). Student learning is facilitated by clinical experiences, which also test students' practical knowledge and give them insight into the reality of nursing profession. These methods support the growth of students' clinical thinking and decision-making skills (Tiwaken et al., 2015).

High self-efficacy in one's capacity to execute skills and evaluations is a prerequisite for success in nursing for aspiring nurses. (George et al., 2020). Many hours are spent by nursing students learning about nursing practice and using what they have learned to provide direct, practical patient care. Maintaining a good grade point average, handling a demanding course load, and tending to ill patients during their clinical placements have all been demonstrated to cause them to experience higher levels of stress and strain (Savitsky et al., 2020).

Clinical placement during the COVID-19 epidemic was already a difficult part of the training program before the added complications. In addition to feeling uneasy about their abilities, students have difficulty defining their professional identities and blending into the team. Because of this, a majority of students suffer from anxiety (Melincavage, 2011). Challenges that students face in clinical practice could pose an alarming danger to their aspirations and objectives, such as unfamiliar surroundings or situations, which can cause psychological, physiological, and behavioral reactions that could negatively affect the student's clinical outcomes. This is what is meant to be understood as clinical placement

anxiety (Simpson & Sawatzky, 2020). High degrees of death fear had been experienced by nursing students caring for COVID-19 patients (Mohammadi et al., 2022). The risk of acquiring the SARS-CoV-2 virus during the clinical placement was higher than that of acquiring the virus outside the clinical placement site (Ulenaers et al., 2021). Clinical placements, a complex curriculum, managing personal obligations with academics, and being exposed to difficult situations involving death, loss, life-threatening illnesses, and ethical issues in nursing practice are among the stressful challenges that nursing students face (Mahfouz & Alsahli, 2016; McCarthy et al., 2018; Watson et al., 2019).

Students' ability to manage stress is influenced by a variety of elements, including gender, age, education level, and health, and well-being, type of stressful situation, personality qualities, and place of residence, among others. While rejecting reality and expressing anger and frustration are potentially negative ways to deal with stress, managing emotions actually helps people solve problems more successfully. It is recommended that students participate in an organizational, psychological, and instrumental assistance program (Babicka-Wirkus et al., 2021).

Understanding how college students lived during the COVID-19 lockdown can help public health officials reframe their recommendations for future legislation about diet, helping them get ready for future pandemics (Zhang et al., 2023). Active coping strategies led to improvements in psychological well-being. Family support was also essential for maintaining their mental health and relieving mental health concerns during this serious health crisis. Thus, college students need more social support, regular monitoring for risk behaviors, and adequate psych intervention in the event of the COVID-19 pandemic or other emergency public health disasters (Huang et al., 2020).

In Palestine, Stress levels among nursing students were higher than those of undergraduates in other programs (Toqan et al., 2022). Nursing students experienced remarkably high rates of stress, anxiety, and depression during the COVID-19 pandemic (Abu-El-Noor, 2021). Stress levels were high, and resistance was modest among nursing students (Bsharat, 2023). Students' perceptions of moderate levels of stress during their first clinical experience were primarily due to caring for patients, instructors, and nursing staff. But the main coping mechanism was problem-solving (Toqan et al., 2022).

Many mental health problems associated with the stress of COVID-19 are expected to affect Palestinian students and all Palestinians. Reason being, daily life for Palestinians is already filled with several stresses, such as economic and political hardships, limitations imposed by the Israeli occupation, and intercity checkpoints. Students are advised to postpone their clinical and prepare for higher tuition (Bsharat, 2023). The aim of this study was to assess self –efficacy, stress and coping mechanisms among undergraduate Nursing students and their perceived Impact of clinical training during the COVID-19 Pandemic

1.2 Statement of the Problem

An integral component of the undergraduate nursing program's curriculum is the practical education of nursing students. The quality and quantity of clinical training may be affected by the COVID19 protection and restrictions measures (El-Ashry et al., 2022). The clinical education of nursing students is learning the nursing skills of health care of patients at the bedside, patients are the focus of health care, assessment, evaluation, physical assessment and medication administration, all these activities must be directly related to patients, but the existence of COVID – 19 prevents this (Ulenaers et al., 2021).

The unprecedented challenges posed by the ongoing COVID-19 pandemic have significantly impacted nursing education worldwide. Undergraduate nursing students have faced immense stressors related to disrupted clinical placements, transition to online learning models, social isolation, concerns for personal and family health, and uncertainties over their future careers (Agu et al., 2021).

Prior to the pandemic, nursing students already reported high stress levels due to the demanding nature of their training program. Clinical placements are a crucial component for developing practical skills but also introduce new stressors around patient care responsibilities, working with limited supervision and evaluations. Effective coping strategies and a strong sense of self-efficacy are important for managing such stress and achieving positive learning outcomes (Carolan et al., 2020).

However, the pandemic has further exacerbated these pressures while limiting opportunities for in-person clinical training. Students have expressed concerns over lacking hands-on experience and feeling unprepared for future practice. The lack of social support from peers and faculty while isolated at home has also negatively impacted mental wellbeing for many (Tolyat et al., 2022).

Studies from other countries found nursing students experienced worsening stress, anxiety and depression during the pandemic compared to pre-COVID times. Yet there has been limited research exploring how Palestinian nursing students have coped with both pandemic-related and usual training demands. Given the unique socioeconomic and political context in Palestine, locally relevant evidence is needed to guide support services (Palese et al., 2021).

Nursing students face significant academic stressors even under normal circumstances. However, clinical training during the COVID-19 pandemic has introduced additional

challenges that could negatively impact self-efficacy, coping, and the overall experience. Strict infection control protocols, limited patient contact, emotional tolls of the healthcare environment, and disruptions to education models have compounded existing stressors (Kalanlar, 2022).

If not properly managed, high stress can undermine self-efficacy beliefs about one's abilities to be a competent nurse. It may also influence adoption of maladaptive coping behaviors rather than healthy stress management. Over time, eroded self-efficacy and coping due to pandemic-induced stress could influence nursing students' mental health, motivation to complete their training program, and future job satisfaction (Danesh et al., 2021).

Despite facing these unique challenges, little research has examined how COVID-19 has affected nursing students' stress levels, coping strategies, and self-efficacy related to clinical skills. This information is crucial to designing support interventions and guiding academic policies. Therefore, this study seeks to understand differences in self-efficacy, stress, and coping behaviors between pre-pandemic and current undergraduate nursing students undergoing clinical placements. Findings will provide insight on supporting student well-being through these difficult times (Ulenaers et al., 2021).

The ministry of health (MOH) and other hospitals have taken specific measures to contain the spread of the pandemic, such as closing departments and setting up special wards for COVID patients, prevention measures such as personal protective equipment (PPE), social isolation, mask use, handwashing, and gloves, with nursing students panicking not only because of the virus itself but also because of all these measures. As a result, the number of students in the training centers has decreased (Bsharat, 2023). Undergraduate nursing students were frustrated about their learning objectives during clinical placement,

due to changes in their clinical placement site during the COVID -19 pandemic. So students focused on the need for more psychological support, more flexibility in the planning of tasks and assignments to close the gaps between the theory and practice. (Ulenaers et al., 2021).

Self-efficacy refers to an individual's belief in their ability to successfully perform tasks and overcome challenges. Understanding the level of self-efficacy among nursing students during the pandemic is important as it can influence their confidence and motivation in managing their clinical duties. Stress, on the other hand, is a common response to challenging situations. The pandemic has introduced unique stressors for nursing students, such as fear of contracting the virus, increased workload, and changes in clinical placements. Examining the stress levels experienced by nursing students during this time can provide insights into their mental well-being and potential areas for support (Madhavanprabhakaran et al., 2021).

Coping behaviors are the strategies individuals employ to manage stress and adapt to difficult circumstances. This research aims to explore the coping mechanisms utilized by nursing students during the pandemic, such as seeking social support, engaging in self-care activities, or utilizing problem-solving skills. Understanding these coping behaviors can inform interventions and support mechanisms to enhance the resilience of nursing students (Schwerdtle et al., 2020).

Additionally, this research will assess the perceived impact of clinical training during the pandemic. Clinical training is a crucial component of nursing education, and modifications made due to the pandemic may have affected the quality of training and the overall learning experience for nursing students. By exploring their perceptions, this

study can identify areas for improvement and inform strategies for optimizing clinical training during similar crises in the future.

Overall, this research seeks to gain a comprehensive understanding of the experiences and perceptions of undergraduate nursing students during the COVID-19 pandemic, focusing on self-efficacy, stress, coping behaviors, and the perceived impact of clinical training. The findings can contribute to the development of support systems and interventions to promote the well-being and resilience of nursing students in challenging times.

1.3 Significance of the Study

Nursing students have gone through a very challenging situation during the COVID-19 pandemic. The learning process has changed from face-to-face interaction to online learning. The clinical application itself has been interrupted for long periods of time, which has widened the gap between theory and practice, as students have to maintain short intervals between theory and clinical to be able to retrieve knowledge and skills.The results of this study will help faculty deans create a contingency plan for future crises that affect learning, and the recommendations will increase awareness and willingness to research the factors that have affected hospital education during similar pandemics.

The impact of COVID-19 on clinical education has been previously documented and strategies to enhance students' clinical learning have been proposed. They could not handle the difficult scenario that was unique to them. Future research should focus on how the pandemic affected clinical learning and how to mitigate its long-term impacts So, fresh insights into this issue would be provided by the outcomes (Tay YX, et al., 2020). Preparing students for spcific compitencies by providing psychological suuport, increasing the learning apportunities, creating additional trainig courses about solving

problem and coping mechanisims for new expectational situations regarding the practice curriculum. Invoving students in highliting solutions to practical training difficulties through their experiences and working on these solutions within the future curriculum (Akyildiz et al.,2021).

The significance of this study lies in its potential to contribute to the field of nursing education and student well-being during the COVID-19 pandemic. Here are a few key points highlighting the significance of this research:

1. Filling the knowledge gap: The COVID-19 pandemic has brought unprecedented challenges to nursing education, and there is a lack of research examining the specific experiences and perceptions of nursing students during this time. This study aims to fill this knowledge gap by providing insights into the interplay between self-efficacy, stress, coping behaviors, and the perceived impact of clinical training. It will generate new knowledge that can inform future educational practices and support systems.

2. Enhancing student support: By understanding the factors influencing nursing students' self-efficacy, stress levels, and coping behaviors, this research can inform the development of targeted interventions and support mechanisms. Such interventions can help nursing students better navigate the challenges of the pandemic, enhance their well-being, and promote resilience.

3. Improving clinical training: The findings of this study on the perceived impact of clinical training during the pandemic can contribute to improvements in nursing education. Identifying areas where modifications to clinical training may have impacted the learning experience can inform future strategies for optimizing clinical training, both during crises and in regular circumstances.

4. Informing policy and decision-making: The insights generated by this research can be valuable for policymakers and educators in making informed decisions regarding nursing education during the pandemic and similar situations in the future. It can guide the development of guidelines, protocols, and resources that support nursing students and prioritize their well-being.

5. Adding to the scientific literature: This study will contribute to the growing body of scientific literature on nursing education and student well-being during the COVID-19 pandemic. It will provide evidence-based information that can be referenced by researchers, educators, and policymakers in the field.

1.4 Purpose of the Study

The main of study was to assess self –efficacy, Stress and Coping Behaviors among undergraduate Nursing students and their perceived Impact of clinical training during the COVID-19 Pandemic

1.5 Research Questions

To achieve the goal of the study, the research questions were:

Research question one :(First branch): what is the perception level of clinical learning among undergraduate nursing students in Palestinian universities during COVID-19 pandemic?

Research question one (second branch): What is the *self-efficacy rating for COVID-19 related skills* among undergraduate nursing students in Palestinian universities during clinical learning?

Research question two: What is the most coping behaviors used by undergraduate nursing students' in Palestinian universities in clinical training during COVID-19 pandemic?

Research question three (first branch): Are there relationship between stress scores mean of the clinical training and coping behaviors among undergraduate nursing students in Palestinian universities during COVID-19 pandemic?

Research question three (second branch): Are there differences between stress scores mean of the clinical training and demographic characteristics among undergraduate nursing students in Palestinian universities during COVID-19 pandemic?

Research question four: Are there differences between coping behaviors scores mean in the clinical training and demographic characteristics among undergraduate nursing students in Palestinian universities during COVID-19 pandemic?

1.6 Study Hypothesis

Hypothesis 1: There is a relationship between stress scores mean of the clinical training and coping behaviors among undergraduate nursing students in Palestinian universities during COVID-19 pandemic

Hypothesis 2: There are differences between stress scores mean of the clinical training and demographic characteristics among undergraduate nursing students in Palestinian universities during COVID-19 pandemic.

Hypothesis 3: There are differences between coping behaviors scores mean in the clinical training and demographic characteristics among undergraduate nursing students in Palestinian universities during COVID-19 pandemic.

1.7 Study Variables

- ➢ **Dependent variables:** Demographic data of participants, student perceptions, Student self-efficacy, Stress, Coping strategies.

- ➢ **Independent variable:** Clinical training of undergraduate Nursing students during COVID-19 Pandemic.

1.8 Conceptual Definitions of Variables

COVID -19: (Coronavirus Disease): The virus known as SARS-CoV-2 is responsible for causing an infectious illness (Yahav et al., 2021).

Perception: Cognition refers to the deliberate perception, discernment, manipulation, and comprehension of information by our brain through all sensory channels. Perception is also employed to denote the act of perceiving. The source is a book published by Springer in 2009. Through the psychological processes of perception, individuals have the ability to transform responses into either good or negative impressions. These processes rely on the experiences gained through the five senses. The stages of interpretation, reaction, and selection are employed to collect responses (Erin & Maharani, 2018).

Self-efficacy: is the term used to describe an individual's conviction in their ability to undertake the essential behaviors to achieve specified goals. Self-efficacy is a measure of one's belief and assurance in their capability to influence and manage their own motivation, actions, and social surroundings (Bandura, 1977).

Stress: Stress is a condition characterized by anxiety or psychological strain resulting from a challenging circumstance. Stress is an inherent physiological and psychological reaction that compels individuals to confront and overcome obstacles and dangers encountered in their life. Stress is a universal feeling that affects everyone to varying extents. Our general well-being is significantly influenced by how we react to stress (Fink, 2010).

Coping strategy: A coping mechanism refers to an activity, a set of activities, or a cognitive process that is employed to deal with a stressful or unpleasant circumstance, or to adjust one's attitude to such a scenario. Coping techniques often entail a deliberate and

proactive approach to addressing difficulties, as opposed to defense mechanisms (De Grandis & Halgunset, 2016).

1.9 Operational Definitions of Variables:

Student Perception scale to measure students' perceptions on impact of COVID-19 on clinical training.

The self-efficacy rating for COVID-19 related skills used to measure self-efficacy of nursing students on their clinical training during COVID-19 epidemic.

The Perceived Stress Score (PSS).used to measure stress perceived by nursing students

The Coping Behavior Scale (CBS), used to assess coping strategies used by nursing students in their clinical training during COVID-19.

1.10 Conceptual Framework
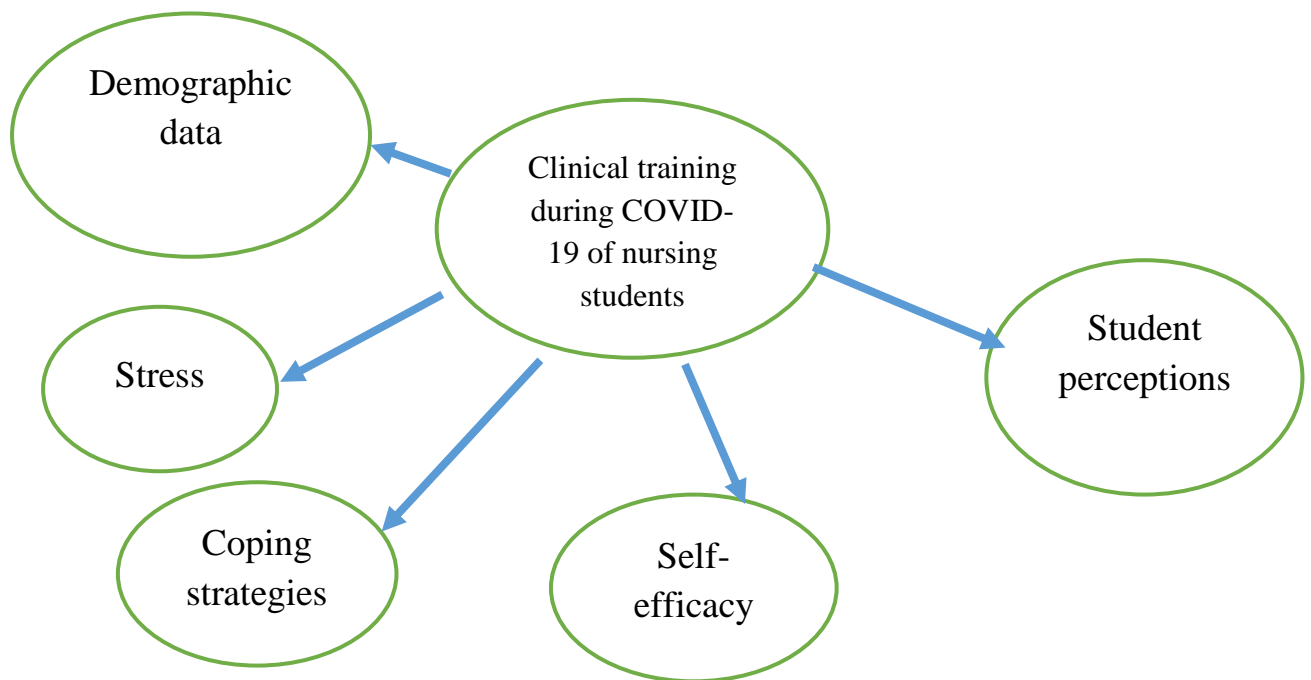
Figure 1-1. Conceptual Framework of the Study

1.11 Summary

Undergraduate nursing students' clinical training has been influenced by the COVID-19 epidemic. Throughout the pandemic, students encountered numerous stressors, the majority of which were associated with providing patient care. Students' self-efficacy was impacted by their fear of contracting the disease and caring for patients on mechanical ventilation, so they were forced to employ coping mechanisms in order to get through the ordeal. The purpose of this study was to assess Nursing students' self-efficacy, stress, and coping behaviors as well as their perceptions on clinical training during the COVID-19 pandemic.

Chapter Two: Literature Review

2.1 Introduction

This chapter examines the existing literature on how nursing students perceive their degree of clinical learning during the COVID-19 pandemic, as well as the assessment of their self-efficacy in COVID-19 related skills. In order to assess the influence of COVID-19 on the clinical education of student nurses, the literature examines the average stress levels experienced by student nurses during clinical education and the coping mechanisms that are most frequently employed. The aim is to identify the major factors that have been quantified in prior research. This chapter is divided into three sections concerning perceptions of clinical learning among nursing students during the COVID-19 pandemic, the variables measured in the study were self-efficacy ratings for COVID-19-related abilities, average clinical education stress levels, and the predominant coping method utilized by nursing students.

2.2 Search Strategy

A comprehensive and systematic search process was conducted to assess the level of perception of clinical learning among nursing students during the COVID-19 pandemic in three major universities in the north, center and south of the West Bank. From the northern area, Al-Najah National University, from the central area, Al-Quds University and from the south, Hebron University.

2.3 Overview of Perception of Undergraduate Nursing Students Toward Clinical Training During Covid-19 Pandemic

Ulenaers and colleagues (2021) conducted cross-sectional research in Belgium, between March 2020 and June 2020, at nine nursing schools. They used the STROBE criteria to examine the clinical placement experience of nursing students during the COVID-19

pandemic. The objective of this study was to examine the encounters of nursing students who were assigned to clinical environments throughout the Covid-19 outbreak. It covered the following five areas for 665 nursing education students: demographics, risk perception, self-efficacy support, communication, and resilience. In this survey, less than half of the students said that the COVID-19 epidemic had an impact on their clinical placement plans. Most students, however, were able to carry out their clinical placement according to schedule. For 36.09% of students (n=240), the clinical placement location changed once; for 9.17% of students (n=61), the pandemic led to multiple site modifications; and for 54.74% of students (n=364), the clinical placement could proceed according to plan. Regarding risk perception, however, the average perceived risk of contracting the SARS-CoV-2 virus during clinical placement was 46.79 ± 27.56 (on a 0–100 scale). 57.74% of the participants estimated that they would spread the infection to others (on a 0–100 scale) as follows: patients (42.34 ± 27.74, 49.47% at least 50%), other caregivers (41.57 ± 27.86, 47.67% at least 50%), and family members (43.72 ± 29.97, 51.28% at least 50%). About self-efficacy on average, students were most confident when it came to identifying patients who were oxygen-deprived. The majority felt they could talk to the nursing school's clinical placement supervisor about their problems, according to support from the institution. Due to the pandemic, the students' experiences with their clinical placements varied significantly, and most of them were worried about getting sick. The learning experiences of the students were greatly affected by this, and most of them felt unready and worried (Ulenaers et al., 2021).

Dempsey and colleagues (2023), employed a qualitative descriptive technique to investigate the experiences of forty-seven undergraduate nursing students who worked clinically in Irish hospital settings during the COVID-19 pandemic. They employed

thematic analysis and online focus group interviews to gather data. It showed five themes: altered patient care, altered patient relationships and communication, an emotionally charged work environment, coping mechanisms during the pandemic, and student learning focused on COVID-19 difficulties like infection fear and increased workload. The findings demonstrated that students persisted in the face of several obstacles, considered their experiences as a means of developing personally as well as professionally, and benefited from the possibilities for learning that were provided (Dempsey et al., 2023).

In their study, Lee et al. (2023) did a cross-sectional correlational analysis to examine the relationship between nurse clinical self-efficacy, professional values, and on-site clinical practice amidst the COVID-19 epidemic. A web-based survey was administered between October 3, 2022, and November 6, 2022, to assess the nursing professional values and nursing clinical self-efficacy. The data was analyzed using the analysis of variance (ANOVA) t-test, Pearson's correlation coefficient, multiple regression, and descriptive statistics. The study's findings indicate that of the 86 participants, 68 (79.1%) were female and 18 (20.9%) were male. The participants engaged in on-site clinical practice for an average of 39.67 days (61.04%) on average. Clinical self-efficacy was strongly influenced by nursing professional values ($\beta = 0.379$, $p < 0.001$). On the other hand, there was no significant correlation between clinical self-efficacy and on-site clinical practice ($\beta = 0.051$, $p = 0.611$). The highest score was obtained for assessing blood glucose in terms of nursing clinical self-efficacy. The lowest ratings, however, were related to setting up and keeping intravenous catheters. The degree of participation in on-site clinical practice during the pandemic did not significantly affect nursing students'

clinical self-efficacy, although there was a strong correlation between nursing students' professional values and their level of self-efficacy (Lee et al., 2023).

Lovric and colleagues (2020) conducted a qualitative study to learn more about the perceptions of Croatian Bachelor of Science (BSc) nursing students regarding the COVID-19 issue as well as their individual experiences of studying during the worldwide epidemic. Students described their experiences and perceptions on an online form that was used to gather data. The study's conclusions were every student gave an account of the population's dangerous behavior and the dissemination of false information on social media. Most people continually take precautions because they fear infection and are concerned for their family's welfare. Students understand the significance of the nursing profession, its challenges, and their duty to the community. They also talked about bad experiences they had living in the student dorm and using public transit. Although there is little need to fear infection in the classroom, students are terrified of the clinical environment. Thirteen kids said they had trouble focusing and learning, however, every student complimented the staff and teacher assistance during this crisis (Lovrić et al., 2020).

In a qualitative research undertaken by Dziurka and colleagues (2022), individual interviews were conducted with 20 nursing students from Poland. The Consolidated criteria for reporting qualitative research (COREQ) checklist is utilized for the purpose of documenting the study. After doing content analysis, five significant categories emerged: "the crucial role of the clinical mentor," "the gap between theory and practice," "mixed emotions and ethical dilemmas," "integration into the team," and "enhanced professional identity." Our research findings suggest that higher education institutions should adopt explicit ways to provide assistance to students, encompassing psychological

support as well as the enhancement of professional competencies that may have been hindered due to the epidemic. Modern technologies, including medical simulations, virtual reality, artificial intelligence, and telemedicine should be employed in the practical education of nursing students to educate them on how to cope with challenging, unfamiliar circumstances, build decision-making abilities, and address difficulties (Dziurka et al., 2022).

2.4 Assessment of Self-Efficacy in Covid-19 Associated Abilities Among Undergraduate Nursing Students During Clinical Training

In their study, Jin and An (2023) did a cross-sectional analysis to examine the relationship between learning commitment, self-efficacy, grit, and college adaptation among 247 Korean nursing students during the prolonged COVID-19 circumstance. The researchers aimed to find the factors that influence the students' ability to adjust to college life. In 2023, the Self-Efficacy Scale, Grit Scale, Learning Commitment Scale for Adults, and Campus Life Adaptation Scale (specifically designed for Korean nursing students) utilized. The results of this study showed that there were substantial and positive correlations between the learning commitment, self-efficacy, grit, and college life adaption of nursing students ($r = 0.414 \sim 0.694$). Thus, learning effort, self-efficacy, and grit were significantly positively correlated with adaptability to college life. Additionally, learning dedication and self-efficacy were important correlates for adjusting to college life (Jin & An, 2023).

Xu et al. (2022) conducted a cross-sectional survey using a web-based platform from April to May 2022. The survey included all undergraduate nursing students from two nursing schools at a university in Jiangsu Province, China, ranging from freshman to senior year. The online questionnaires were administered through the 'Questionnaire Star'

website (https://www.wjx.cn). Nursing undergraduates have recently completed their COVID-19 protective isolation and are now transitioning back to in-person learning. The study utilized several assessment tools, including the Generalized Anxiety Disorder Scale-7, Patient Health Questionnaire-9, Academic Self-Efficacy Scale, Perceived Social Support Scale, and Mindful Attention Awareness Scale, to examine how psychological distress impacts the academic self-efficacy of nursing undergraduates. The study found that psychological distress had an indirect influence on academic self-efficacy through three factors: social support (-0.064), mindfulness (-0.053), and the combined effects of social support and mindfulness (-0.015). These extra indirect effects further contribute to the impact of psychological distress on academic self-efficacy. Social support and mindfulness play a strong mediating role in the link between psychological distress and academic self-efficacy, forming a chain of mediation. Teachers can mitigate the adverse impact of psychological distress on students' academic self-efficacy by promoting social support and mindfulness among their pupils (Xu et al., 2023).

Aydin and Dogan (2021) investigated the use of descriptive and cross-sectional methodologies among first-year nursing students at a health sciences faculty of a university. The study was completed without sample selection, encompassing 89 consenting nursing students, which accounted for 91% of the population. Data for the research was collected using the Fear of COVID-19 Scale, the General Self-Efficacy Scale, the Clinical Stress Questionnaire, and the Student Introductory Information Form. The findings indicated that the average age of the students was 20.24±1.15 years. Furthermore, 59.6% of the students were female, 43.8% of them had contracted COVID-19, and 60.7% of their families had also been affected by the virus. Additionally, 14.6% of the students had experienced the unfortunate loss of a loved one due to COVID-19.

The student achieved a total score of 63.91±11.18 on the General Self-Efficacy Scale, and a mean score of 24.83±5.87 on the Fear of COVID-19 Scale. The Clinical Stress Questionnaire yielded a mean score of 31.19 with a standard deviation of 7.8. The correlation between the overall General Self-Efficacy Scale score and the Fear of COVID-19 Scale total score was positive and strong (p<0.05), although it did not reach statistical significance. First-year nursing students had low levels of stress, high levels of general self-efficacy, and a significant fear of COVID-19 throughout their initial clinical practice experience (AYDIN & DOĞAN, 2023).

Goki and colleagues (2023), conducted a descriptive cross-sectional study performed in 2020 on 277 nursing, operating room, and anesthesia students in Tehran, Iran, throughout their seventh and eighth semesters. Using a random number table, students were chosen by a basic random sampling method. After their validity and reliability were established, the study's instruments—which included the demographic, clinical education quality, and clinical self-efficacy questionnaires—were distributed to the participants via Telegram and WhatsApp. The study aimed to find out how Tehran, Iran-based nursing, operating room, and anesthesia students' clinical self-efficacy and the quality of their clinical education were affected by changes in clinical education settings during the COVID-19 pandemic. The study's results showed that the mean age of the students was 23.59±3.49. Additionally, 64.30% of the students were female. The clinical self-efficacy and quality of clinical education had mean total values of 104.88±23.01 and 57.38±12.43, respectively. The quality of clinical education was evaluated by 57% of students, and the degree of clinical self-efficacy was moderated by 51.60% of them. There was a significant correlation (r=0.12, P-value=0.04) between the clinical self-efficacy total score and the quality of clinical education. Therefore, nursing instructors should take into account the

use of innovative teaching strategies, designing the course according to the needs of the students and the environment, and enhancing their skills and clinical self-efficacy (Soltani Goki et al., 2023).

2.5 Stressors and Coping Behaviors Employed By Undergraduate Nursing Students During Clinical Training Throughout the Covid-19 Epidemic.

Masha'al and colleagues (2020) investigated the adaptive strategies and psychological distress experienced by nursing students resuming their studies within the COVID-19 epidemic. A cross-sectional research was undertaken, involving a sample of 282 nursing students who resumed their studies during the summer of the academic year 2019–2020. Among the participants, 76% reported having moderate to severe anxiety. Additionally, a positive association was found between the students' poor coping mechanisms— behavioral disengagement, self-blame, denial, and venting—and their anxiety levels. Students who had majored in nursing were actively employing coping mechanisms (Masha'al et al., 2020).

Aslan and Pekince (2020) assessed the perspectives of nursing students on stress and their opinions on the COVID-19 pandemic. A total of 662 nursing students from Inonu, Kilis, and Bingol University in eastern Turkey took part in the study conducted between April and May 2020. The findings of this study suggest that age, gender, and some characteristics associated with the pandemic process exert influence on the reported stress levels of nursing students (Aslan & Pekince, 2021).

In a study done by El-Ashry et al. (2022), the researchers examined the clinical challenges experienced by first-year nursing students at Alexandria Main University Hospital during the COVID-19 epidemic. The study utilized a convenience sample of 200 students to assess the various types and levels of stress experienced by first-year nursing students in

clinical hospital settings. Additionally, it aimed to examine the relationship between students' clinical stressors and their level of concern with COVID-19..   Findings indicated that the two most often reported forms of stress were stress related to the clinical hospital (M = 13.54) and stress related to professional knowledge and competence deficiencies (M = 13). All of the students showed significant levels of stress about the total stressors (M = 116.87). Additionally, according to COVID-19, the following student characteristics were highly statistically significant: p = 0.000, 0.030 with perceived stress, age, sex, number of study hours per week, number of assignments per week, and worry (El-Ashry et al., 2022).

In a study presented in 2015, Zhao FF and colleagues studied the effects of Chinese undergraduate nursing students' self-efficacy on how they handle stress in a clinical environment. Convenience sampling was used in the study to choose final-year Mainland Chinese undergraduate nursing students who had finished three months of hospital practice. Self-report questionnaires were used to collect demographic information, and scores on the Known Self-Efficacy Scale, the Coping Activity Inventory, and the measure of perceived stress. The results showed that students' primary sources of stress during clinical practice were their workload and academic assignments. Whereas the most frequently used coping strategy is transference. Furthermore, the effects of workload and assignment stress on the problem-solving technique as well as the impacts of treating patients' stress on the transference method were both reduced by self-efficacy. Additionally, it showed a favorable main effect when determining how frequently people would utilize tactics for problem-solving and confidence (Zhao et al., 2015).

Iyigun and associates (2022) examined a cross-sectional studies using the technique of observation. A survey was completed anonymously by 709 Italian nursing students. This

study measured the stress levels, emotions, and amount of worry that nursing students had during the COVID-19 pandemic to identify how they felt about the virus. The student's stress and anxiety levels were assessed using the COVID-19 student stress survey and the generalized anxiety disorder scale, respectively. The survey results indicated that a majority of the sample, namely 56.8%, reported facing difficulties when it came to regularly or consistently engaging in distant learning activities. The most commonly cited difficulty was connectivity troubles, which were stated by 75.7% of respondents. During the three-year research, the average scores for generalized anxiety disorder across students were consistent, with most students expressing mild to moderate anxiety (35%) and a smaller percentage reporting severe anxiety (19%). The standard deviation for the mean scores was 5.4. The average COVID-19 stressor scores for kids were 11.40 (SD = 6.50). Among them, 47.1 percent reported moderate stress, 25% reported low stress, and 28% reported severe stress. Hence, in order to provide optimal remote learning, it is imperative to make necessary enhancements and financial investments to provide superior connection, adequate student technical support, and effective strategies for promoting mental well-being (Iyigun et al., 2022).

Deo and associates (2020) performed a web-based cross-sectional survey among nursing students between June 20 and July 15, 2020. In this study, nursing students' perceptions of stress, anxiety, sadness, and sleeplessness during the COVID-19 pandemic were evaluated. A self-administered, digitally organized questionnaire was used for the research, which was carried out at Nobel College in Sinamangal, Kathmandu. The study's conclusions showed that 71.73% of respondents had normal levels of anxiety and 77.71% of respondents had normal levels of sadness. In a similar vein, 93.47% reported normal stress levels. Similarly, 47.28% reported no clinically noteworthy degree of sleeplessness.

Additionally, 58.7% of respondents to this study reported feeling anxious when they read or hear news reports about the rising number of COVID-19 cases. Similarly, a long duty hour causes stress, according to 44.4% of respondents. During the COVID-19 pandemic, another factor contributing to stress levels among nursing students was the high cost of recharging mobile data (36.4%) for online courses. and 29.9% of them fear a delay in graduating (Deo et al., 2020).

2.6 Summary

Previous studies have shown how much COVID-19 has impacted nursing student's clinical training, literature showed negative perceptions towards their experiences during clinical training as very much stress was shown, students had also to use different coping strategies in order to accommodate to stressors they faced during the epidemic.

Chapter Three :Methods & Materials

3.1 Introduction

This chapter describes the study design and methods used. First, the study settings and population characteristics; followed by a description of the study design, study setting, study data collection, study tool, data analysis, and study subject "Inclusion and Exclusion Criteria ". Then study ethical consideration are presented, and finally the chapter summary that addresses the data management and analysis.

3.2 Study Setting and Population Characteristics

This study included sample of undergraduate nursing students enrolled in the bachelor's degree course in Nursing from three major universities in the West Bank (Palestine), Al-Najah National University located in the north area, Al-Quds University located in the middle, and Hebron University from the south area of the West Bank-Palestine.

3.3 Study Subjects

The study population was undergraduate nursing students in the third and fourth year of the study. Population number was 123 undergraduate nursing students and we excluded 30 students of them who participated in pilot study.

3.4 Inclusion Criteria

The inclusion criteria included: A third and fourth year undergraduate regular Nursing students, participants who attended the clinical practice courses.

3.5 Exclusion Criteria

The exclusion criteria included: First and second year undergraduate regular Nursing students (as these students have no or very limited clinical experience and who could withdraw from the clinical practice courses).

3.6 Research Design

This study utilized a quantitative research approach, specifically a descriptive cross-sectional study, assessed and reported the perception level of clinical practice, self-efficacy rating for COVID-19 related skills, the mean stress scores, and the most coping behaviors used by undergraduate Nursing students during clinical practice at Palestinian universities. The study did not involve any manipulation or control of the participants.

3.7 Study Sample

The study included all undergraduate Nursing students in the third and fourth year at Palestinian universities, Al-Najah National University, Al-Quds University, and Hebron University. 93 students with response rate 100% (The real number of the sample was 123 students. Non probability convenient sampling was used to obtain the desired number of the patients.

3.8 Data Collection Procedure

In addition to presenting the research thesis and explaining it to the chief of nursing faculties and participating students, the researcher met with university students to discuss the goals of the study. On her initial visit to the institution, the researcher offered prospective volunteers to join the study after selecting people who were enrolled at the three universities. The participants received a complete disclosure of the study from the researcher. The participants' consent has been gained, if they are prepared to proceed. After providing written informed consent to participate in the study, 93 undergraduate nursing students were chosen from the three universities. Study was accomplished from March (2022) to June (2022).

3.9 Instrument

Measurement scales: A self -structured questionnaire, was developed to accommodate the study's aim within the Palestinian society, and to assess the study variables in English language. It was examined by three scientific research experts and was modified according this examination also it was used in the pilot study before using in the actual study. It composed of the followings parts:

Part one: Demographic characteristics of nursing students includes age, gender, Cumulative Grade Point Average (GPA), place of residence, university, academic year, Nursing Clinical practice course, have you ever tested positive for COVID-19? Have you had family members, or close relatives who tested positive for COVID-19? And did you lose family members, or close relatives due to COVID-19?

Part two: Student Perception of the Clinical practice during COVID-19 pandemic. it consisted of fourteen statements: They are, the clinical period was sufficient to apply the required skills, the skills required from the training were applied directly with the patient during COVID-19 Pandemic period, the clinical period was continuous without interruption during COVID-19 Pandemic, the clinical training was conducted in the appropriate department for the practical training course during the Pandemic period, The students were distributed to the departments of the hospital ,each student according to what suits his training material during the Pandemic covid-19 period, All precautions were used by the trainee students during the Pandemic covid-19 period, The presence of infectious cases with corona virus prevented from completing or starting training during The Pandemic covid-19 period, The simulation lab was used for training instead of practical training in hospitals during the Pandemic covid-19 period, Attending the hospital during the practical training days was easy without any difficulties, Practical

training has been applied at the hospital without delay, All required hours of training have been completed in the hospital according to the curriculum scheduled during the Pandemic covid-19 period, You had a fear of contracting the corona virus during the practical training period in the hospital, You had a fear of being impaired in your practical training in the hospital as a result of infection with the covid-19, and finally, In general the Pandemic covid-19 affected the practical training process in hospitals. The perception scores were transformed into percentages by dividing the respondents' scores by the maximum possible values and then multiplying by 100. The cumulative score of each outcome was computed utilizing Bloom's threshold (Blooms, 1956). The percentage level was categorized as negative impression (below 60%), neutral perception (60-79%), and positive perception (80-100%) based on the aggregate results. This part was developed by the researcher through searching previous literature on the subject. The answers were according to a Likert scale of Never, Seldom, Occasionally, and Frequently.

Part three: The self-efficacy rating for COVID-19 related skills among undergraduate nursing students consisted of (seven statements): 1. Properly put on and remove protective equipment, 2.Taking precautions against droplet transmission, 3.Managing the psychological impact of isolation on the patient, 4.Recognizing patients with oxygen deprivation, 5.Administering oxygen, 6.Observation and monitoring of patients with respiratory infections, 7.Observation and monitoring of ventilated patients. A self-efficacy score of 75 or above is achieved on a scale ranging from 0 (indicating no confidence) to 100 (indicating strong confidence). Scale is adopted from: (Ulenaers et al., 2021).

Part four: The Perceived Stress Score (PSS) is consisted of 29 questions that are assessed using a five-point Likert Scale, with response options ranging from 0 (Never) to 4 (Very frequently). A score equal to or greater than 2.67 indicated a high degree of stress, a score between 1.34 and 2.66 indicated a moderate level of stress, and a score less than 1.34 suggested a low level of stress. Previous samples have demonstrated a six-factor model for the Perceived Stress Scale (PSS), which includes stress related to (1) patient care, (2) teachers and nursing staff, (3) assignments and workload, (4) peers and everyday life, (5) lack of professional knowledge and abilities, and (6) the clinical setting. **Stress** from taking care of patients, is consisted of eight subscales questions 1. Lack of experience and ability in providing nursing care and in making judgments, 2. Do not know how to help patients with physio-psycho-social problems, 3. Unable to reach one's expectations, 4. Unable to provide responses to doctors', teachers', and patients' questions, 5. Worry about not being trusted or accepted by patients or patients' family, 6.Unable to provide patients with good nursing care, 7.Do not know how to communicate with patients, 8.Experience difficulties in changing from the role of student to that of a nurse, Stress from teachers and nursing staff is consisted of six stress subscales questions, 1.Experience discrepancy between theory and practice, 2.Do not know how to discuss patients' illnesses with teachers, and medical and nursing personnel, 3.Feel stressed that teacher's instruction is different from one's expectations, 4.Medical personnel lack empathy and are not willing to help, 5.Feel that teachers do not give a fair evaluation on students, 6.Lack of care and guidance from teachers, Stress from assignments and workload is consisted of five stress subscales questions: 1.Worry about bad grades, 2.Experience pressure from the nature and quality of clinical practice, 3.Feel that one's performance does not meet teachers 'expectations 4.Feel that the requirements of clinical practice

exceed one's physical and emotional endurance, 5.Feel that dull and inflexible clinical practice affects one's family and social life, Stress from peers and daily life is consisted of four stress subscale questions: 1.Experience competition from peers in school and clinical practice, 2.Feel pressure from teachers who evaluate students 'performance by comparison, 3.Feel that clinical practice affects one's involvement in extracurricular activities, 4.Cannot get along with other peers in the group, Stress from lack of professional knowledge and skills is consisted of three stress subscales questions: 1.Unfamiliar with medical history and terms, 2.Unfamiliar with professional nursing skills, 3.Unfamiliar with patients' diagnoses and treatments, Stress from the environment is consisted also of three stress subscales questions: 1.Feel stressed in the hospital environment where clinical practice takes place, 2.Unfamiliar with the ward facilities, 3.Feel stressed from the rapid change in patient's condition. The Perceived Stress Scale (PSS), (Sheu et al., 1997:341–351) (Sheu et al., 2002).

Part five: The Coping Behavior Scale (CBS)

The CBS is a Likert scale with 19 items of equal weight, rated on a 5-point scale ranging from 0 (never) to 4 (always) (Sheu et al., 2002). The measure comprises four subscales: problem-solving behavior (consisting of 6 items), avoidance coping (consisting of 6 items), optimistic behavior (consisting of 4 items), and transference behavior (consisting of 3 items). The component analysis on the original scale revealed that the four variables explained 38.2% of the variation. Factor one has a total of seven questions and assesses avoidance behaviors, which refer to the actions used to evade or steer clear of the stressful circumstance. Factor two has six questions and assesses problem-solving behaviors, specifically acts used to regulate or modify the tension that arises from a stressful scenario. Factor three has four elements and assesses optimistic coping behaviors, which

refer to the actions taken to maintain a positive mindset in the face of a stressful scenario. Factor four has three components that assess transference coping strategies, which refer to the actions used to divert one's focus from a stressful circumstance to other matters. A higher overall score on each component indicates a greater frequency of using the coping method. The Cronbach's α coefficient for the CBI was (0.76), indicating a reasonable level of reliability for the scales (Sheu et al., 2002). A score of (2.67 or above) showed a high level of coping strategies, a score between (1.34 and 2.66) suggested a moderate level of coping strategies, and a score below (1.34) indicated a low level of coping strategies.

3.10 Ethical Consideration

The Health Research Ethics Committee of the AAUP conducted an ethical evaluation and granted clearance for this study. The targeted universities' administrators provided permission letters. The participation permission form, which provided students with sufficient information about the study's objectives and procedures, also guaranteed that the data collection process would handle student information in a completely confidential and anonymous manner.

3.11 Pilot Study

Prior to commencing the main study on the second instrument, which focuses on students' perception of clinical learning during the COVID-19 pandemic period, the author ran a pilot study on a representative sample including 10% of the total participants. The purpose of the pilot research is to identify anticipated issues or barriers in the data gathering process, as well as assess the appropriateness of the questionnaire items. This stage will assist the author in assessing and guaranteeing the lucidity and familiarity of the terms and phrases used in the questionnaire from the participants' standpoint. Their views are

anticipated to disclose if the things are lucid, unambiguous, exhaustive, appropriate, and straightforward to accomplish. The completion of the questionnaire is estimated to require around 10 minutes. The pilot study participants were excluded from the main study.

3.12 Data Analysis

The data was analyzed using the Statistical Package for Social Sciences 23.0 (SPSS-IBM Corp., Armonk, NY, USA) software. The descriptive statistics comprise the following measures: Mean (M), frequency, percentage, range, and standard deviation (SD).

The statistical tests employed were the independent t-test, one-way ANOVA, and correlation analysis. Statistical significance was determined by using a p-value of less than 0.05.

A self-efficacy score of 75 or more is achieved on a scale ranging from 0 (indicating no confidence) to 100 (indicating strong confidence).

The score representing the level of stress: A score equal to or greater than 2.67 indicated a high degree of stress, a score between 1.34 and 2.66 indicated a moderate level of stress, and a score less than 1.34 suggested a low level of stress.

The fifth section pertains to the Coping Behavior Scale (CBS). A score equal to or greater than 2.67 indicated a high level of coping strategies, a score between 1.34 and 2.66 suggested a moderate level of coping strategies, and a score less than 1.34 showed a low level of coping strategies.

Chapter Four: Results

4.1 Introduction

This chapter focuses on the data gathered for analysis. The statistical approach enabled the investigator to infer, analyze, organize, quantify, assess, and communicate the numerical data. The objective of data analysis is to furnish solutions to inquiries pertaining to the study. The data analysis approach is derived directly from the research objectives, study design, data gathering technique, and the level of measurement of the data. This chapter will revise, organize, analyze, and evaluate the data that has been gathered...

4.2 Reliability of the Study Scales

The Cronbach's Alpha values for all scales above 0.70, demonstrating satisfactory internal consistency or homogeneity of the questionnaire, as shown in 4-1.

Table 4 -1. Cronbach's Alpha of the scales

Scale	Item	Cronbach's Alpha
Perception of Clinical learning	14-questions	0.74
Self-efficacy	7 items	0.88
Perceived stress scale	29 items	0.96
Coping behaviors	19 items	0.87

4.3 Participants' Characteristics

Ninety-three nursing students participated in the study. The analysis revealed that the majority of the participants 59 (63.4%) was between 18-21 years old and 73 (78.5%) were females. More than half of them 49 (52.7%) live in Village and 46 (49.5%) have GPA between 2.6-3 point, as seen in Table 4-2.

Table 4-2. Demographic Characteristics of the Participants (N=93)

Variable		N	(%)
Age	18-21 years	59	63.4
	22-25 years	28	30.1
	More than 25 years	6	6.5
Gender	Male	20	21.5
	Female	73	78.5
Residence area	City	33	35.5
	Camp	11	11.8
	Village	49	52.7
GPA	1-1.5	2	2.2
	1.6 – 2	15	16.1
	2.1- 2.5	20	21.5
	2.6-3	46	49.5
	3.1 - 3.5	10	10.8

Also, the analysis revealed that slightly less than half of the nursing students 44 (47.3%) from Al-Quds university, as seen in Figure 4-1.
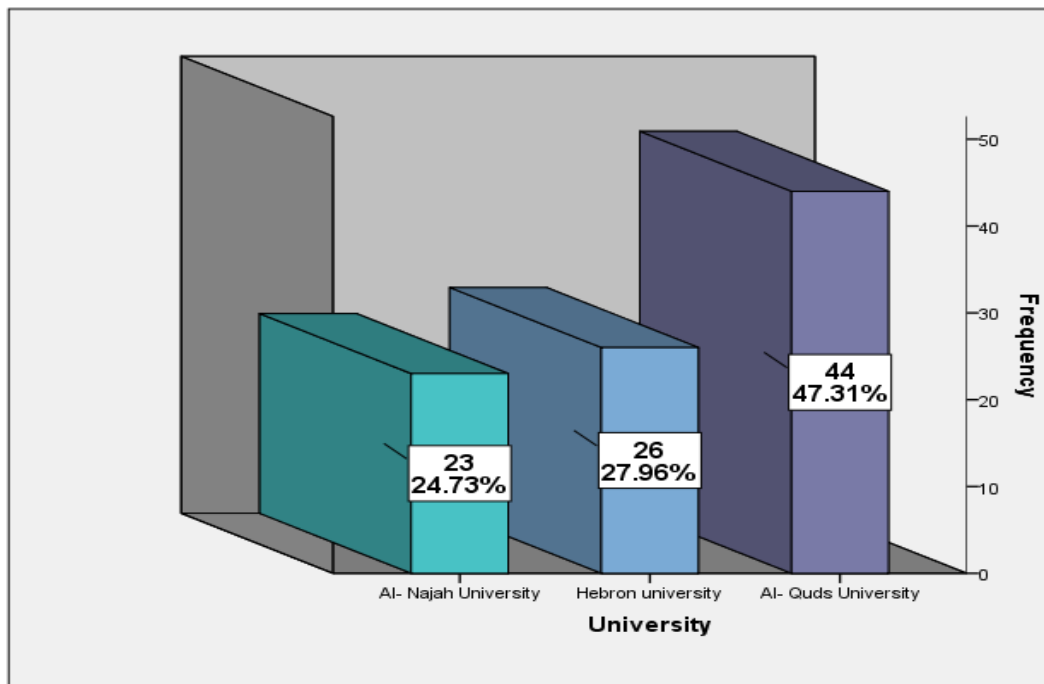
Figure 4-1. Distribution of the participants according to the University (N=93)

According to the academic level, the analysis revealed that majority of the nursing students 64 (68.8%) from fourth year, as seen in Figure 4-2.
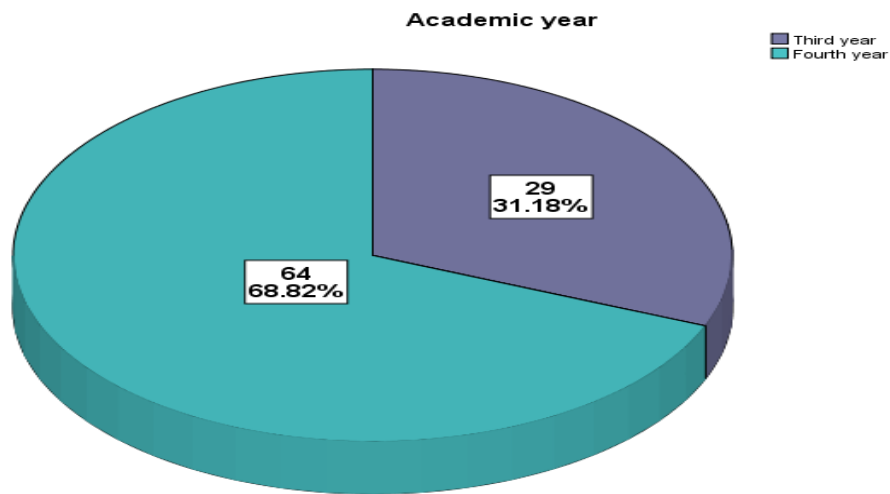
Figure 4-2: Distribution of the participants according to academic year (N=93)

In addition, the analysis revealed that 20 (21.5%) of the nursing students enrolled in Advance health nursing (Adult III) training course, 16 (17.20%) of them enrolled in pediatrics health nursing the same results for medical & surgical (1&2) training course, 12(12.90%)of them enrolled in maternity health nursing the same results for community health nursing training course, 11(11.83%) of them enrolled in nursing management and administration training course and 6(6.45%) of them enrolled in fundamental of nursing training course as seen in Figure 4-3.
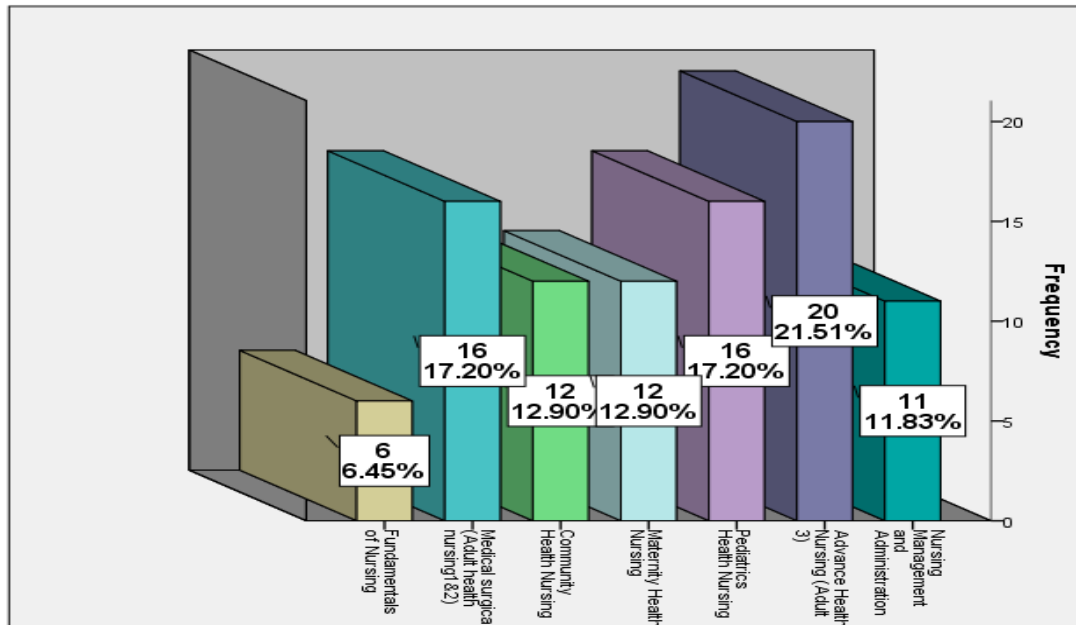
Figure 4-3: Distribution of the participants according to training course (N=93)

Regarding COVID-19 infection, the analysis revealed that the majority of the participants 64 (68.8%) were not positive COVID-19 and 64 (68.8%) had family member of COVID-19. Also, 75 (80.6%) of the participants did not lose any of their family members due to COVID-19. As seen in Table 4-3.

Table 4-3. History of COVID-19 among nursing students (N=93)

Variable			N	(%)
Positive COVID-19	Yes		29	31.2
	No		64	68.8
Family member COVID-19	Yes		64	68.8
	No		29	31.2
Lost family members	Yes		18	19.4
	No		75	80.6

1.4 Testing the Research Questions

Research question one: (First branch) what is the perception level of clinical learning among undergraduate nursing students' in Palestinian universities during COVID-19 pandemic?

The analysis indicated that most of the participants 82 (88.2%) had negative perception of clinical learning during COVID-19 pandemic and no one had positive perception, The perception scores were transformed into percentages by dividing the respondents' scores by the maximum possible values and then multiplying by 100. The cumulative score of each outcome was computed utilizing Bloom's threshold (Blooms, 1956). The percentage level was categorized as negative impression (below 60%), neutral perception (60-79%), and positive perception (80-100%) based on the aggregate results. This part was developed by the researcher through searching previous literature on the subject. The answers were according to a Likert scale of Never, Seldom, Occasionally, and Frequently. As seen in 4-4.

Table 4-4. Description of the participants' perception of the clinical learning (N=93)

Variable		N	(%)
Perception	Negative perception	82	88.2
	Neutral perception	11	11.8
	Positive perception	0	0.0

According to the items, the analysis revealed that the most items reported frequently by the participants were "The students were distributed to the departments of the hospital ,each student according to what suits his training material during the Pandemic COVID-19 period", "You had a fear of contracting the corona virus during the practical training period in the hospital", and "All required hours of training have been completed in the

hospital according to the curriculum scheduled during the Pandemic COVID-19 period", respectively.

On the other hand, lowest questions that reported frequently by participants were "Attending the hospital during the practical training days was easy without any difficulties", "The simulation lab was used for training instead of practical training in hospitals during the Pandemic COVID-19 period", and both "You had a fear of being impaired in your practical training in the hospital as a result of infection with the COVID-19" and "The clinical period was sufficient to apply the required skills", respectively, as seen in table 4-5.

Table 4-5. Distribution of the item analysis of the participant' perception of the clinical

learning (N=93)

	Item	Never	Seldom	Occasionally	Frequently
1	The clinical period was sufficient to apply the required skills.	16 (17.2)	49 (52.7)	12 (12.9)	16 (17.2)
2	The skills required from the training were applied directly with the patient during pandemic covid-19 period	8 (8.6)	40 (43.0)	27 (29.0)	18 (19.4)
3	The clinical period was continuous without interruption during pandemic covid-19	16 (17.2)	39 (41.9)	18 (19.4)	20 (21.5)
4	The clinical training was conducted in the appropriate department for the practical training course during the Pandemic period.	13 (14.0)	18 (19.4)	28 (30.1)	34 (36.6)
5	The students were distributed to the departments of the hospital ,each student according to what suits his training material during the Pandemic covid-19 period	19 (20.4)	14 (15.1)	10 (10.8)	50 (53.8)
6	All precautions were used by the trainee students during the Pandemic covid-19 period.	3 (3.2)	37 (39.8)	21 (22.6)	32 (34.4
7	The presence of infectious cases with corona virus prevented from completing or starting training during The Pandemic covid-19 period	21 (22.6)	20 (21.5)	19 (20.4)	33 (35.5)
8	The simulation lab was used for training instead of practical training in hospitals during the Pandemic covid-19 period	28 (30.1	33 (35.5)	19 (20.4)	13 (14.0)
9	Attending the hospital during the practical training days was easy without any difficulties	38 (40.9)	30 (32.3)	16 (17.2)	9 (9.7)
10	Practical training has been applied at the hospital without delay	23 (24.7)	29 (31.2)	12 (12.9	29 (31.2)
11	All required hours of training have been completed in the hospital according to the curriculum scheduled during the Pandemic covid-19 period	14 (15.1)	21 (22.6)	13 (14.0)	45 (48.4)
12	You had a fear of contracting the corona virus during the practical training period in the hospital	5 (5.4)	17 (18.3)	23 (24.7)	48 (51.6)
13	You had a fear of being impaired in your practical training in the hospital as a result of infection with the covid-19".	35 (37.6)	17 (18.3)	25 (26.9)	16 (17.2)
14	In general the Pandemic covid-19 affected the practical training process in hospitals	11 (11.8)	17 (18.3)	22 (23.7)	43 (46.2)

Research question one (second b ranch): What is the *self-efficacy rating for COVID-19 related skills* among undergraduate nursing students' in Palestinian universities during clinical learning?

The analysis revealed that the students felt, on average, most confident about "Properly put on and remove protective equipment" (M= 77.3 ± 20.6) with 61.3% scoring 75 or higher on a scale from 0 (no confidence) to 100 (strong confidence), followed by "Taking precautions against droplet transmission" (M= 75.5± 18.3) for which 57.0% scored 75 or higher. Students felt less confident about Observation and monitoring of patients with respiratory infections (M= 61.2 ± 27.8, 32.3% 75+ score). Students felt least confident about Observation and monitoring of ventilated patients (mean 58.5± 27.8, 26.9% 75+ score). Further details are provided in Table 4-6.

Table 4-6. Nursing students' self-efficacy rating for COVID-19 related skills (N=93)

	To what extent do you have confidence in your skills in the following areas?	Score: 0 (no confidence) to 100 (strong confidence)		75 or Higher	
No.		M	SD	n	%
1	Properly put on and remove protective equipment.	77.3	20.6	57	61.3
2	Taking precautions against droplet transmission	75.5	18.3	53	57.0
3	Managing the psychological impact of isolation on the patient	66.2	22.1	33	35.5
4	Recognizing patients with oxygen deprivation	69.8	22.6	39	41.9
5	Administering oxygen	66.8	27.6	39	41.9
6	Observation and monitoring of patients with respiratory infections	61.2	27.8	30	32.3
7	Observation and monitoring of ventilated patients	58.5	27.8	25	26.9

Research question one (Third branch): Is the stress scores mean of the clinical training among undergraduate nursing students in Palestinian universities during COVID-19 pandemic high?

The analysis showed that the students had the highest level of confidence, on average, in the skill of "Properly put on and remove protective equipment" (mean = 77.3 ± 20.6), with 61.3% of them scoring 75 or higher on a scale ranging from 0 (no confidence) to 100 (strong confidence). This was followed by the skill of "Taking precautions against droplet transmission" (mean = 75.5 ± 18.3), with 57.0% scoring 75 or higher. Students exhibited decreased confidence in the observation and monitoring of patients with respiratory infections, as shown by a mean score of 61.2 ± 27.8 and 32.3% achieving a score of 75 or above. Observation and monitoring of ventilated patients was the area in which students had the lowest level of confidence, with a mean score of 58.5± 27.8 and only 26.9% achieving a score of 75 or above. The participants reported that the most prevalent stressors were related to patient care, with a mean score of 15.7±6.3. This was followed by stress caused by teachers and nursing staff, with a mean score of 13.3±6.0, and stress from assignments and workload, with a mean score of 11.0±4.4.

The primary source of stress for students was the pressure arising from the nature and quality of clinical practice, with a mean score of 2.5±1.07. This was followed by the stress caused by teachers evaluating students' performance through comparison, with a mean score of 2.4±0.98. Lastly, students reported feeling stressed due to their uncertainty about how to discuss patients' illness with teachers or medical and physical therapy personnel, with a mean score of 2.4±1.03. These findings can be observed in Table 4-7.

Table 4-7. Stressors perceived by Nursing students in their clinical training during

COVID-19 pandemic (N=93)

Stress factor	M	SD
Perceived stress scale	61.2	23.6
I. Stress from taking care of patients	15.7	6.3
1. Lack of experience and ability in providing care and in making judgments.	1.9	.95
2. Do not know how to help patients with physio-psycho-social problems.	2.0	1.03
3. Unable to reach one's expectations	2.2	1.10
4. Unable to provide appropriate responses to doctors', teachers', and patients' questions.	1.7	.96
5. Worry about not being trusted or accepted by patients or patients' family.	2.0	1.31
6. Unable to provide patients with good care.	1.6	1.12
7. Do not know how to communicate with patients.	2.2	1.17
8. Experience difficulties in changing from the role of a student to that of profession.	2.0	.86
II. Stress from assignments and workload.	11.0	4.4
1. Worry about bad grades.	2.1	1.02
2. Experience pressure from the nature and quality of clinical practice.	2.5	1.07
3. Feel that one's performance does not meet teachers' expectations.	2.1	1.28
4. Feel that the requirements of clinical practice exceed one's physical and emotional endurance.	2.0	1.24
5. Feel that dull and inflexible clinical practice affects one's family and social life.	2.3	1.25
111. Stress from Lack of Professional Knowledge and skills	6.4	3.76
1. Unfamiliar with medical history and terms.	2.2	1.33
2. Unfamiliar with professional nursing skills.	2.0	1.40
3. Unfamiliar with patients' diagnoses and treatments.	2.2	1.23
IV Stress from the environment.	6.3	3.20
1. Feel stressed in the hospital environment where clinical practice takes place.	2.2	1.04
2. Unfamiliar with the ward facilities.	1.9	1.36
3. Feel stressed from the rapid change in patient's condition	2.2	1.09
V. Stress from peers and daily life	8.5	3.82
1. Experience competition from peers in school and clinical practice.	2.1	1.19
2. Feel pressure from teachers who evaluate students' performance by comparison.	2.4	.98
3. Feel that clinical practice affects one's involvement in extracurricular activities.	2.2	1.10
4. Cannot get along with other peers in the group.	1.8	1.51

VI. Stress from teachers and nursing staff	13.3	6.0
1. Experience discrepancy between theory and practice.	2.2	1.38
2. Do not know how to discuss patients' illness with teachers or medical and physical therapy personnel.	2.4	1.03
3. Feel stressed that teacher's instruction is different from one's expectations	2.2	1.25
4. Medical personnel lack empathy and are not willing to help.	2.2	1.25
5. Feel that teachers do not give fair evaluation on students.	2.2	1.17
6. Lack of care and guidance from teachers	2.1	1.25

Research question two: What is the most coping behaviors used by undergraduate nursing students' in Palestinian universities in clinical training during COVID-19 pandemic?

According to the CBI participants' coping behavior was (M = 40.08±10.54). The most common coping behavior utilized by the participants was problem solving (M= 15.9±4.7), followed by Avoidance (M = 12.1±4.5), and Stay Optimistic (M = 10.4±3.7) while transference was least frequently utilized (M = 6.2±2.9), as seen in Table4-10.

The most common coping behaviors were "To quarrel with others and lose temper" (M= 2.9±1.2); "To make plans, list priorities, and solve stressful events" (M= 2.8±0.8); "To set up objectives to solve problems" (M= 2.7±1.1) respectively, as seen in Table 4-8.

Table 4-8. Coping behavior perceived by Nursing students in their clinical training

during COVID-19 pandemic (N=93)

Items	M(SD)
Coping behavior inventory	40.8(10.5)
I. Avoidance	12.1(4.5)
1. To avoid difficulties during clinical practice.	1.9(1.2)
2. To avoid teachers.	1.7(1.3)
3. To quarrel with others and lose temper.	2.9(1.2
4. To expect miracles so one does not have to face difficulties.	2.5(1.2
5. To expect others to solve the problem.	1.9(1.1
6. To attribute to fate.	1.3(1.4
II. Problem Solving.	15.9(4.7)
1. To adopt different strategies to solve problems.	2.6(1.0
2. To set up objectives to solve problems.	2.7(1.1
3. To make plans, list priorities, and solve stressful events.	2.8(.8
4. To find the meaning of stressful incidents.	2.5(1.0
5. To employ past experience to solve problems.	2.6(1.0
6. To have confidence in performing as well as senior schoolmates.	2.7(1.1
111 Stay Optimistic	10.4(3.7)
1. To keep an optimistic and positive attitude in dealing with everything in life.	2.7(1.1
2. To see things objectively.	2.6(.9
3. To have confidence in overcoming difficulties.	2.7(1.1
4. To cry, to feel moody, sad, and helpless.	2.5(1.2
IV Transference	6.2(2.9)
1. To feast and take a long sleep.	1.7(1.1
2. To save time for sleep and maintain good health to face stress.	2.2(1.1
3. To relax via TV, movies, a shower, or physical exercises.	2.2(1.2

Research question three (first branch): Are there relationship between stress scores mean of the clinical training and coping behaviors among undergraduate nursing students' in Palestinian universities during COVID-19 pandemic?

Additionally, the research demonstrated a link between perceived stress and coping activities such as avoidance, problem solving, and transference (P<0.5). Nevertheless, there was no discernible association observed between the stress levels of the students and their overall mean coping mechanisms.

Furthermore, the findings indicated a strong positive correlation between the use of avoidance as a coping mechanism and the stresses associated with patient care, assignments and workload, lack of professional knowledge and abilities, surroundings, peers and everyday life, as well as teachers and nursing staff (P< 0.05). Furthermore, when problem solving was used as a coping mechanism, the findings indicated a noteworthy positive association with stresses pertaining to patient care, assignments and workload, insufficient professional knowledge and abilities, as well as interactions with peers and everyday life (P< 0.05). Furthermore, there was a notable positive link between transference and stresses associated with patient care, assignments and workload, peers and everyday life, and teachers and nursing staff (P< 0.05). Table 4-9 demonstrates a noteworthy positive link (P< 0.05) between utilizing optimism as a coping mechanism and stresses specifically associated with the absence of Professional Knowledge and abilities.

Table 4-9. Relationship between stressors and coping behavior (N=93)

Stress factor	Avoidance	Problem Solving.	Stay Optimistic	Transference	Coping
Stress from taking care of patients	.206∗ .048	-.205∗ .048	-.041 .700	.234∗ .024	
Stress from assignments and workload.	.276∗ .007	-.237∗ .022	-.083 .431	.256∗ .013	
Stress from Lack of Professional Knowledge and skills	.258∗ .012	-.340∗ .001	-.207∗ .046	.103 .324	
Stress from the environment.	.357∗ .000	-.104 .322	.079 .451	.199 .056	
Stress from peers and daily life	.404∗ .000	-.346∗ .001	-.076 .467	.280∗ .007	
Stress from teachers and nursing staff	.410∗ .000	-.140 .181	.087 .409	.323∗ .002	
Stressors	.365∗ .000	-.259∗ .012	-.039 .711	.281∗ .006	.062 .552

Note. ∗ P< 0.05.

Research question three (second branch): Are there differences between stress scores mean of the clinical training and demographic characteristics among undergraduate nursing students' in Palestinian universities during COVID-19 pandemic?

An independent t test and ANOVA test were used to assess differences between nursing students' perceived stress score mean and the demographic characteristics. The differences were significantly with Age, GPA, and the university ($p < 0.05$), as shown in table 4-10.

Table 4-10. Differences between students' demographic characteristics and stress scores

mean (N=93)

Variable		N	M SD	Statistical test	
					P value
Gender	Male	20	61.6(21.4)	**t=**.093	.926
	Female	73	61.0(24.3)		
Age	18-21 years	59	64.7(21.6)	F= 6.43	0.002*
	22-25 years	28	49.8(25.0)		
	More than 25 years	6	79.5(13.2)		
GPA	1-1.5	2	35.0(14.1)	F= 6.438	.002*
	1.6 – 2	15	53.2(21.5		
	2.1- 2.5	20	67.6(25.8		
	2.6-3	46	63.3(21.9		
Resident area	City	33	57.0(22.6	.963	.386
	Camp	11	59.7(30.1		
	Village	49	64.3(22.7		
University	Al Najah University	23	73.6(22.5	F= 4.731	.011*
	Hebron university	26	58.9(22.7		
	Al_ Quds University	44	56.0(22.8		
Academic year	Third year	29	64.3(22.8	t=.865	.389
	Fourth year	64	59.7(24.0		
Training area	Fundamentals of Nursing	6	52.2(25.7	F=1.748	.120
	Medical surgical (Adult health nursing1&2)	16	71.4(23.5		
	Community Health Nursing	12	60.3(26.0)		
	Maternity Health Nursing	12	73.3(19.9)		
	Pediatrics Health Nursing	16	56.9(19.3)		
	Advance Health Nursing (Adult 3)	20	53.0(22.9)		
	Nursing Management and Administration	11	60.1(25.8)		
Positive COVID-19	Yes	29	62.0(23.1	t=.239	.812
	No	64	60.8(24.0		
Family history	Yes	64	63.5(23.7	t=1.985	.162
	No	29	56.1(22.8		
Lose family members	Yes	18	70.7(22.2	1.943	.055
	No	75	58.9(23.5		

Note. $* P < 0.05.$

Research question four: Are there differences between coping behaviors scores mean in the clinical training and demographic characteristics among undergraduate nursing students' in Palestinian universities during COVID-19 pandemic?

An independent t test and ANOVA test were used to assess differences between coping behaviors score mean and the demographic characteristics. The analysis revealed that there were no significant differences between students' coping behaviors score mean and the demographic characteristics ($p > 0.05$), as shown in table 4-11.

Table 4-11. Differences between students' demographic characteristics and coping

behaviors scores mean (N=93)

Variable		N	M (SD)	Statistical test	
					P value
Gender	Male	20	39.4(7.2)	t=-.346	0.730
	Female	73	40.3(11.3)		
Age	18-21 years	59	41.1(9.5)	F=.793	.455
	22-25 years	28	38.6(11.5)		
	More than 25 years	6	37.0(16.2)		
GPA	1-1.5	2	22.5(7.8)	F=1.840	.128
	1.6 - 2	15	41.5(8.1)		
	2.1- 2.5	20	38.1(12.1)		
	2.6-3	46	41.2(8.9)		
Resident area	City	33	39.2(11.0)	F=0.416	.661
	Camp	11	38.5(14.6)		
	Village	49	41.0(9.3)		
University	Al Najah University	23	37.7(10.8)	F=2.282	.108
	Hebron university	26	38.1(12.8)		
	Al_ Quds University	44	42.5(8.5)		
Academic year	Third year	29	42.3(9.5	t=1.383	.170
	Fourth year	64	39.1(10.9		
Training area	Fundamentals of Nursing	6	44.0000	F=.821	.557
	Medical surgical (Adult health nursing 1&2)	16	38.1(5.8)		
	Community Health Nursing	12	40.3(14.3)		
	Maternity Health Nursing	12	40.3(12.9)		
	Pediatrics Health Nursing	16	44.2(8.1)		
	Advance Health Nursing (Adult 3)	20	37.8(11.2)		
	Nursing Management and Administration	11	38.5(11.8)		
Positive COVID-19	yes	29	41.7(9.9)	t=.972	.333
	no	64	39.4(10.8)		
Family history	yes	64	40.6(11.1)	t=.524	.471
	no	29	38.9(9.2)		
Lose family members	Yes	18	43.5(10.6)	t=1.546	.126
	No	75	39.3(10.4)		

Chapter five: The Discussion

5.1 Introduction

The main objective of this study was to assess self –efficacy, Stress and Coping Behaviors among undergraduate Nursing students and their perceived Impact of clinical training during the COVID-19 Pandemic.

5.2 The Perception Level of Clinical Learning Among Undergraduate Nursing Students in Palestinian Universities During Covid-19 Pandemic

The study findings indicated that the majority of participants, namely 82 individuals (88.2%), had a negative perspective of clinical learning amidst the COVID-19 epidemic, with no participants reporting a favorable perception. The findings align with a prior research conducted by Angasu et al. (2021), which attempted to evaluate the adverse effects of COVID-19 on clinical learning among midwifery and nursing undergraduate students at Jimma University in southwest Ethiopia. The study also provided ways for compensating these negative consequences. The study found that 59.9% of the study participants observed significant unfavorable effects of COVID-19 on their previous clinical learning (Angasu & Bekela, 2021).

According to the items, this study revealed that (51.6%) of participants had a fear of contracting the corona virus during the practical training period in the hospital, which is congruent with a study by, (Ulenaers et al., 2021) It unveiled several factors contributing to the dread experienced by pupils throughout their practice: The study conducted by Hussein et al., (2020) demonstrated that anxiety among students is a normal response due to the increased risk of transmission in their environment (Hussein et al., 2020).

Another study was conducted by Nabavian et al., (2021) aligns with study aim of examining the clinical education experiences of nursing students during the COVID-19

pandemic. The findings revealed that a significant number of participants experienced fear when summoned to attend clinical settings due to concerns of contracting the virus and subsequently transmitting it to others, particularly their family members (Nabavian et al., 2021b). The findings of parallel investigations conducted by Alatawi, (2021) and Seah et al., (2021) demonstrate that students experience apprehension over the possibility of contracting or transmitting infections to their family members (Alatawi, 2021; Seah et al., 2021). Furthermore, this result is consistent with a qualitative study in Croatia which showed that most of undergraduate nursing students were afraid of infection and worried about well-being of their family (Lovrić et al., 2020).

Additionally, the results of this study comes in line with another study performed by (Ulenaers et al., 2020) which concluded that the Pandemic covid-19 affected the practical training process in hospitals in general as (46.2 %). And (35.5%) of participants mentioned that the presence of infectious cases with corona virus prevented from completing or starting training during The Pandemic covid-19 period which is also compatible with the result in nursing school in Belgium about Concerns about practical matters, limited educational prospects, and even basic uncertainties over their decision to pursue a career as a nurse (Ulenaers et al., 2021). In a different research study conducted by Hernández-Martinez A et al. (2021), the aim was to elucidate the experiences and perspectives of students pursuing a Nursing university degree while serving as health support during the COVID-19 health crisis in Spain. The findings revealed that a mere 3.4% of the participants felt highly equipped to work in the intensive care setting. Notably, those students who reported a greater sense of preparedness had undergone prior training in personal protective equipment and mechanical ventilation (Hernández-Martínez et al., 2021).

Furthermore, another research investigation conducted in Spain by Hernandez-Martinez et al. (2020) examined the experience and training of nursing students in providing healthcare aid during the pandemic. The study found that students who had received training in the use of personal protective equipment (PPE) and mechanical ventilation felt more confident in their ability to assist COVID-19 patients, particularly in critical care settings.

5.3 Covid-19 Associated Skills Self-Efficacy Assessment

On the other hand, this study examined the students' level of confidence on the task of "Properly put on and remove protective equipment." The average confidence score was 77.3 ± 20.6, with 61.3% of students scoring 75 or above on a scale ranging from 0 (no confidence) to 100 (strong confidence). This result demonstrates a lack of consistency with multiple studies that have demonstrated that the global demand for personal protective equipment has resulted in a shortage of proper protective gear for direct care workers, including nurses and nursing students. This shortage has increased their susceptibility to contracting COVID-19 (Zhang et al., 2023).

Additionally, the survey found that students displayed a high level of confidence (M= 75.5 ± 18.3) in their ability to take safeguards against droplet transmission. Specifically, 57.0% of students scored 75 or above in this area. According to a recent study conducted by Rohde et al. (2022), baccalaureate nursing students expressed less confidence in their ability to observe and monitor patients with respiratory infections. The study aimed to investigate the impact of the COVID-19 pandemic on these students' learning experiences and social lives. Among students involved in clinical practice (second- and third-year students), 74% reported feeling adequately equipped with knowledge and skills to handle infection control related to COVID-19. However, 69% expressed concerns about

contracting the virus themselves, and 85% were worried about transmitting the virus to patients (Rohde et al., 2022). Furthermore, the findings indicated that students exhibited the lowest level of confidence in the area of observing and monitoring ventilated patients. This aligns with the research conducted by Alcalá-Albert et al. (2022), which revealed that the care of patients with coronavirus necessitated the implementation of unfamiliar caregiving practices. Certain pupils found it difficult to comprehend the functioning of invasive mechanical ventilation, tracheotomy cleaning, and similar procedures (Alcalá-Albert et al., 2022).

5.4 Stress Scores

Additionally, this study revealed that the participants had a significant level of stress, with an average score of (61.2). This finding aligns with research done in Bahrain by (John & Al-Sawad, 2015), which uncovered that nearly all nursing students encountered degrees of stress ranging from moderate to severe throughout their clinical practice. Similarly, a research done by (Joseph et al., 2022) saw a consistent outcome, where participants stated various emotions in their survey, with tension being the predominant emotion followed by fear (about 60%). In the current study, the most prevalent stressors reported were related to the responsibility of caring for patients (M=15.7±6.3). On the other hand, the main stress factor for students was the pressure arising from the nature and quality of clinical practice (M = 2.5±1.07). These findings align with a study conducted by (Alcalá-Albert et al., 2022), which found that fear was the predominant emotion expressed by interviewees before and during their internships in COVID-19 units. The individuals conveyed apprehension and unease over clinical placements, which are now seen as hazardous, due to the concern of contracting an infection and a deficiency in understanding and proficiency in providing care for these patients.

In addition, the study conducted by (Hamadi et al., 2021) found that more than 99% of nursing students reported experiencing moderate to high levels of perceived stress. Multiple research have demonstrated that clinical stress may be ascribed to the apprehension and uncertainty surrounding unfamiliar occurrences, as well as discrepancies between theoretical knowledge and practical application.

Furthermore, this study revealed that the primary source of stress among nursing students was the burden of assignments and workload. This finding aligns with the research conducted by (Zhao et al., 2015), which also identified assignments and workload as the predominant stressors experienced by students during clinical practice.

Furthermore, students reported feeling stressed due to two specific factors: "Experiencing pressure from teachers who assess students' performance through comparisons" (M = 2.4±0.98), and "Lacking the knowledge on how to discuss patients' illnesses with teachers or medical and physical therapy personnel" (M = 2.4±1.03) respectively. This is incongruous (Alcalá-Albert et al., 2022) found that students considered healthcare clinical tutors to be the most significant sources of assistance in their professional area. Students felt comforted by engaging in discussions with these tutors to address their problems. The findings were incongruous with the study conducted by , as their participants (Jokar et al., 2023) engaged in discussions and shared their experiences with peers, got assistance from instructors, and utilized video communication with family members as means of support to adjust to the prevailing circumstances. (Alcalá-Albert et al., 2022) also demonstrated in their study that certain individuals perceive clinical training as a distressing encounter. The presence of infected patients and the unavoidable continuous interaction in the work environment led to heightened levels of stress and anxiety. Some individuals voiced apprehension over the risk of contracting an infection, perceiving it as

a draining and ongoing state of uncertainty. This aligns with the notion that fear can contribute to stress, particularly while caring for patients.

5.5 The Most Coping Behaviors Used By Nursing Students

The students mostly employed problem-solving as their primary coping behavior, with an average score of 15.9±4.7. The findings align with a research conducted by (Jokar et al., 2023), which demonstrated that participants in the current study utilized support sources and problem-oriented coping mechanisms to manage the stressful situations caused by the pandemic. Seeking current knowledge on pandemic containment methods, optimal social interaction, and utilization of spirituality. In addition, (Huang et al., 2020) shown in their study that nursing students had a greater inclination towards employing coping techniques that emphasized problem-solving. This finding aligns with the results of the present study.

In addition, as demonstrated in the study conducted by (Al-Zayyat and Al-Gamal, 2014), the most often mentioned sources of stress were patient care responsibilities, tension stemming from interactions with teachers and nursing staff, and the demands of assignments and workloads. The predominant coping mechanism employed throughout both data-collection periods was problem solving, which aligns with the findings of this study.

Conversely, the coping strategy of Avoidance (M = 12.1±4.5) was shown to be the most commonly utilized by students. This finding aligns with a research conducted by Jokar et al. (2023), which demonstrated that students who relied on spirituality were able to overcome anxiety, adjust to new circumstances, and provide care for patients. (Attributed to destiny).

In addition, a separate investigation conducted by Labrague et al. (2017) and Savitsky et al. (2020) revealed that undergraduate students who perceived stressful situations as within their control were more inclined to employ problem-focused coping mechanisms. However, due to the uncontrollable nature of COVID-related events during the study period, students may have resorted to emotion-focused coping behaviors such as Avoidance and Transference, which contradicts previous research findings (Labrague et al., 2017; Savitsky et al., 2020).

Furthermore, among the prevalent coping behaviors observed was the tendency to engage in arguments and display anger (M= 2.9±1.2). This finding contradicts the findings of (Alcalá-Albert et al., 2022), who reported that their research participants disconnected from the hospital environment after their shift and coped by socializing with friends

5.6 Relationship Between Stress Scores Mean of the Clinical Training and Coping Behaviors

 Also, this study revealed that there is correlation between perceived stress and avoidance, which came in analog with (Jokar, 2023), as in his study, he found out that The majority of students refrained from interacting with the patients out of apprehension of catching Covid-19 and attempted to avoid them. In my perspective, the act of transferring the patient might be seen as a form of avoidance. Nevertheless, although this study did not find any connection between students' stress scores and coping strategies as an overall average, (John, 2015) demonstrated in his research that nursing students encounter stress even in typical situations and must employ various coping strategies to alleviate both stress and anxiety, as supported by previous studies.

Furthermore, an additional study conducted by (Jokar et al., 2023) revealed a noteworthy positive correlation between the use of avoidance as a coping mechanism and stressors

associated with patient care. Conversely, the employment of optimism as a coping strategy exhibited a significant positive correlation with stressors linked to a deficiency in professional knowledge and skills.

5.7 Relationship Between Self-Efficacy and Stress

Academic self-efficacy and psychological distress had a significant negative association, according to a correlation analysis (P 0.05). Academic self-efficacy decreases when psychological discomfort increases. This finding is in line with research by (Xu et al., 2023) which examined the state of academic self-efficacy and its related influencing factors (psychological distress, social support, and mindfulness) in nursing undergraduates after COVID-19 and found that psychological distress had a significant direct effect on academic self-efficacy ($\beta = 0.168$, P = 0.026), accounting for 56% of the total effect.

5.8 Strength and Limitation of this Study

This study aimed to evaluate the perceived effects of the Covid-19 pandemic on the clinical training of undergraduate Nursing students in prominent institutions in Palestine. Consequently, individuals who are interested may obtain explicit guidance on how to address the issue. Given that this study relied on students' opinions, it is anticipated that it will serve as a catalyst for pushing students to identify deficiencies in their clinical learning and proactively address them. Future research should involve clinical educators and other pertinent stakeholders to propose compensatory strategies aimed at mitigating the enduring adverse effects of COVID-19 on clinical learning, considering that this study solely included student participants.

There were certain restrictions on the study that must be addressed. The study has a significant restriction due to its small sample size. This study's participants were not given

any compensation for their time, which could have discouraged some people from participating in the survey. This survey only included three institutions of higher learning. As curriculum fluctuate between each nursing school, including additional institutions in this study might have led to different outcomes in terms of self-efficacy ratings and the number of hours replaced by other educational experiences.

5.9 Implications to Nursing and Recommendations:

- It is beneficial for nursing educators and managers to have a deeper understanding of how psychological distress affects nursing undergraduate students' academic self-efficacy in order to better mitigate its effects.

- These results can assist nursing curriculum writers understand how to provide the necessary knowledge and tools to equip nurses for upcoming viral epidemics.

- The findings would help clinical educators assess students' needs, support their learning in the clinical context, and provide stress-reduction strategies that would be beneficial.

- The results of this study can help clinical educators detect nursing students' stresses and lessen those students' learning challenges in the clinical situation.

- The results can be used to guide the development of clinical skills curricula that take into account the virtual world and to help future-proof skill education in the event of more catastrophic interruptions.

- These findings have significant implications for nursing colleges and hospitals, as they highlight the need to prioritize psychological support for nurses. Additionally, it is crucial to provide comprehensive training in various coping strategies to enhance nurses' emotional management skills and equip them with

effective coping tools. By doing so, we can improve the well-being of nursing students, their families, and ultimately, the quality of care provided to patients.

5.10 Conclusion/Implications for Nursing & Health Policy

- Due to differences, the influence of the COVID-19 pandemic on nursing education in underdeveloped nations may be larger than in wealthy nations. Online learning has replaced traditional classroom instruction as the preferred method for completing the program, yet this method ignores the clinical practicum requirement. Concerns about staff oversight and student safety may arise when students return to the clinical setting. It could be difficult to afford the cost of outfitting professors and students with personal protection equipment for each clinical practicum contact. Therefore, a multi-sectoral intervention should be implemented through a cooperative effort between the government, healthcare organizations, academic institutions, and nursing regulating authorities in order to always be ready to respond to emergencies.

- Stress is the major issue during pandemics that negatively affect students' learning and academic performance because of their dread and worry. Teachers must be on the lookout for these effects and take proactive steps to keep a close eye on their students and to act quickly when necessary. In order to intervene as soon as possible, instructors must get training in identifying signs of student stress. Students should have access to counseling services and other mental health resources. Additionally, coping techniques for handling stress should be taught to students.

5.11 Conclusions:

The COVID-19 pandemic had a catastrophic effect on humanity. Additionally, it was detrimental to first-year nursing students. This study emphasizes the requirement that higher education institutions put into place efficient methods to lessen the adverse impacts. Universities must emphasize mental health support during such situations, promote transparent communication, and be flexible with academic obligations. Future studies should include strategies for calming nursing students' anxiety and tension amid comparable health emergencies.

According to (Susmarini D, Sumarwati M, Handayani F, Iskandar A. 2023), For Nursing students, the pandemic scenario offers both advantages and disadvantages. Positive circumstances that develop, such improved technological proficiency, more help from family and friends, creativity, and constructive coping, can keep growing. Educational institutions must come up with measures to address the negative aspects of practice during this epidemic, including unachievable competence, fear, and the cost of COVID assessment.

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Appendices

Appendix (1): Questionnaire

Self-efficacy, Stress, and Coping Mechanisms of Undergraduate Nursing Students: Assessing the Impact of Clinical Training During the COVID-19 Pandemic on Their Perceptions

Section One: Characteristics of participants

1. **Age**
   1. 18-21
   2. 22-25
   3. 25 & above

2. **Gender**
   1. Male
   2. Female

3. **Cumulative Grade Point Average (GPA):**
   1. 1-1.5
   2. 1.6-2
   3. 2.1-2.5
   4. 2.6-3
   5. 3.1-3.5
   6. 3.6-4

4. **Place of residence:**
   1. City
   2. Camp
   3. Village

5. **University**

   1. Al Najah University   2. Hebron university   3. Al_ Quds University

7-Academic year :

   1-Second year   2- Third year   3- fourth year

8- Nursing Clinical training area:

1- Fundamentals of Nursing

2- Medical surgical (Adult health nursing1&2)

3- Community Health Nursing.

4- Maternity Health Nursing

5- Pediatrics Health Nursing

6- Advance Health Nursing (Adult 3)

7- Nursing Management and Administration

9-Educational level of father:

1- 6 years

2- 7-12 years

3- > 12 years

10. Educational level of mother:

4- 6 years

5- 7-12 years

6- > 12 years

11-Living status:

1- With family alone

2- With roommates

12-Presence of financial problems:

1- Yes

2- No

13- Have you ever tested positive for COVID-19 ?

1- Yes

2- No

14- Have you had family members , or close relatives who tested positive for COVID-19

1- Yes

2- No

15- Did you lose family members, or close relatives due to COVID-19?

1- Yes

2- No

Sections Two: Clinical status during COVID 19 pandemic period:
For each statement, please select the frequency that mostly fits with you by putting (X) in the box.

Note: Be sure you respond in terms of what you are doing in the clinical setting at the present time.

No.	Item	Never	Seldom	Occasionally	Frequently	Always
1.	The clinical period was sufficient to apply the required skills.					
2	The skills required from the training were applied directly with the patient during pandemic covid-19 period					
3	The clinical period was continuous without interruption during pandemic covid-19					
4	The clinical training was conducted in the appropriate department for the practical training course during the Pandemic period.					
5	The students were distributed to the departments of the hospital ,each student according to what suits his training material during the Pandemic covid-19 period					
6	All precautions were used by the trainee students during the Pandemic covid-19 period. ".					
7	The presence of infectious cases with corona virus prevented from completing or starting training during The Pandemic covid-19 period					
8	The simulation lab was used for training instead of practical training in hospitals during the Pandemic covid-19 period					
9	Attending the hospital during the practical training days was easy without any difficulties					
10	practical training has been applied at the hospital without delay					

No.	Item	Never	Seldom	Occasionally	Frequently	Always
11	All required hours of training have been completed in the hospital according to the curriculum scheduled during the Pandemic covid-19 period					
12	You had a fear of contracting the corona virus during the practical training period in the hospital					
13	You had a fear of being impaired in your practical training in the hospital as a result of infection with the covid-19".					
14	In general the Pandemic covid-19 affected the practical training process in hospitals					

Section three: Nursing students' resilience in their clinical training during covid 19 pandemic period

Variables	yes	no
Cared for COVID-19 patients		
Provided PPE or mask from workplace		
Had taken a training/course on caring for COVID-19 patients and protecting oneself		
Have you had fear of being infected by COVID -19 during your recent clinical practicum?		
Do you perceive that fear of being infected by COVID-19 has impaired your clinical learning?		
Have you had the desire and acceptance to do practical training in hospitals during the epidemic COVID-19?		

Has the university, in coordination with the hospital, has developed safety strategies according to COVID-19, during the period of training in hospitals?		
Do your clinical instructor encourage and motivate you through recent training in the hospital during the epidemic COVID-19?		
Do you take care of a patients with COVID -19 during your training in the hospital?		
Do you perceive that COVID-19 had an influence on reducing your grade during your recent clinical practice?		
Do you perceive that fear of being infected by COVID-19 has impaired your clinical learning?		
Do you perceive that your patients had fear of being infected by COVID-19?		
Do you perceive that you achieved your clinical learning objectives during your recent clinical practice?		
Do you perceive that you were motivated for your clinical learning during your recent clinical practice?		
Do you perceive that your clinical teachers were motivated to teach you during recent clinical practice?		
Overall perceived resilience during Covid-19	high	Low

Section Four: Nursing students' self-efficacy rating for COVID-19 related skills.

Score: 0 (no confidence) to 100 (strong confidence) 75 or higher

No.	To what extent do you have confidence in your skills in the following areas?	
	Statement	%
1	Properly put on and remove protective equipment.	
2	Taking precautions against droplet transmission	
3	Managing the psychological impact of isolation on the patient	
4	Recognizing patients with oxygen deprivation	
5	Administering oxygen	
6	Observation and monitoring of patients with respiratory infections	
7	Observation and monitoring of ventilated patients	

Section Five: The Perceived Stress Scale (PSS) and Coping Behavior Inventory (CBI) questions.

	Subscales	Subscale Questions	0(never)	1almost never	2sometimes	3fairly often	4very often
	Stress						
1	Stress from taking care of patients	1.Lack of experience and ability in providing nursing care and in making judgments					
		2.Do not know how to help patients with physio-psycho-social problems					
		3.Unable to reach one's expectations					
		4.Unable to provide responses to doctors', teachers', and patients' questions					
		5.Worry about not being trusted or accepted by patients or patients' family					
		6.Unable to provide patients with good nursing care					
		7.Do not know how to communicate with patients					
		8.Experience difficulties in changing from the role of student to that of a nurse					
	Stress from teachers and nursing staff	1.Experience discrepancy between theory and practice					
		2.Do not know how to discuss patients' illnesses with teachers, and medical and nursing personnel					
		3.Feel stressed that teacher's instruction is different from one's expectations					
		4.Medical personnel lack empathy and are not willing to help					

		5.Feel that teachers do not give a fair evaluation on students					
		6.Lack of care and guidance from teachers					
	Stress from assignments and workload	1.Worry about bad grades					
		2.Experience pressure from the nature and quality of clinical practice					
		3.Feel that one's performance does not meet teachers' expectations					
		4.Feel that the requirements of clinical practice exceed one's physical and emotional endurance					
		5.Feel that dull and inflexible clinical practice affects one's family and social life					
	Stress from peers and daily life	1.Experience competition from peers in school and clinical practice					
		2.Feel pressure from teachers who evaluate students' performance by comparison					
		3.Feel that clinical practice affects one's involvement in extracurricular activities					
		4.Cannot get along with other peers in the group					
	Stress from lack of professional knowledge and skills	1.Unfamiliar with medical history and terms					
		2.Unfamiliar with professional nursing skills					
		3.Unfamiliar with patients' diagnoses and treatments					
	Stress from the environment	1.Feel stressed in the hospital environment where clinical practice takes place					
		2.Unfamiliar with the ward facilities					
		3.Feel stressed from the rapid change in patient's condition					

	Coping Strategy		0 never	1 almost never	2 sometimes	3 fairly often	4 very often
1	**Avoidance**	1.To avoid difficulties during clinical practice					
		2.To avoid teachers					
		3.To quarrel with others and lose temper					
		4.To expect miracles so one does not have to face difficulties					
		5.To expect others to solve the problem					
		6.To attribute to fate					
2	**Problem-solving**	1.To adopt different strategies to solve problems					
		2.To set up objectives to solve problems					
		3.To make plans, list priorities, and solve stressful events					
		4.To find the meaning of stressful incidents					
		5.To employ past experience to solve problems					
		6.To have confidence in performing as well as senior schoolmates					
3	**Stay optimistic**	1.To keep an optimistic and positive attitude in dealing with everything in life					
		2.To see things objectively					
		3.To have confidence in overcoming difficulties					
		4.To cry, to feel moody, sad, and helpless					
4	**Transference**	1.To feast and take a long sleep					
		2.To save time for sleep and maintain good health to face stress					
		3.To relax via TV, movies, a shower, or physical exercise (playing, jogging)					

Appendix (2): Consent form

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نموذج الموافقة

اسم الباحث: جواهر صلاح

عزيزي الطالب: يرجى انتهاز الفرصة لتأكيد موافقتك قبل البدء في ملء معلوماتك

أؤكد أنني قد قرأت وفهمت ورقة المعلومات الخاصة بالدراسة أعلاه وتيحت لي الفرصة لطرح الأسئلة.

1. أفهم أن مشاركتي طوعية وأنني حر في الانسحاب في أي وقت دون إبداء الأسباب.

2. فهمت أن جميع المعلومات ستبقى سرية وسيبقى اسمي مجهولاً.

3. وافقت على المشاركة في الدراسة أعلاه.

اسم المشارك   التاريخ   التوقيع

الكفاءة الذاتية، القلق، واستراجيات التكيف بين طلاب التمريض الجامعيين: تقييم أثر التدريب العملي على انطباعاتهم خلال جائحة كوفيد-19

ملاحظة ـ يتكون هذا الاستبيان من ثلاثة أقسام

(1) القسم الأول: المعلومات الديموغرافية

(2) القسم الثاني: أسئلة لقياس المعلومات

(3) القسم الثالث: أسئلة لقياس الممارسة حول

شاكرين لكم حسن تعاونكم

بإشراف: د. عبير حسين

</div>

بسم الله الرحمن الرحيم

أنا الطالبة جواهر محمد علي صلاح ، طالبة ماجستير تمريض الطوارئ في الجامعة العربية الأمريكية. أقوم بعمل بحث علمي كمتطلب لإنهاء الماجستير تحت عنوان:

Self-efficacy, Stress, and Coping Mechanisms of Undergraduate Nursing Students: Assessing the Impact of Clinical Training During the COVID-19 Pandemic on Their Perceptions

أرجو من حضرتكم التكرم بالإجابة عن جميع أسئلة هذا الاستبيان بدقة وموضوعية لغرض انجاح هذا البحث مع تعهدنا لكم بالحفاظ على سرية معلوماتكم وعدم استخدامها إلا لأغراض البحث العلمي المحدد فقط. (يستغرق ملئ الاستبيان من 10-15 دقيقة). وان استلامكم لهذا الاستبيان يعتبر موافقة صريحة للاشتراك في الدراسة.

Appendix (3): Facilitating letter

Arab American University
Faculty of Graduate Studies

الجامعــة العربيــة الأمريكيــة
كلية الدراسات العليا

16/5/2022

الى من يهمه الأمر

<u>تسهيل مهمة بحثية</u>

تحية طيبة وبعد،

نهديكم كلية الدراسات العليا في الجامعة العربية الأمريكية أطيب التحيات، وبالاشارة الى الموضوع أعلاه، تشهد كلية الدراسات العليا في الجامعة أن الطالبة جواهر محمد علي صلاح والتي تحمل الرقم الجامعي 202012820 هي طالبة ماجستير في برنامج الطوارئ وتعمل على رسالة الماجستير الخاصة بها بعنوان: " تأثير جائحة كوفيد-19 على التدريب العملي لطلاب التمريض في الجامعات الفلسطينية، وجهة نظر من فلسطين" تحت إشراف الدكتورة عبير خليل حسين ، نأمل من حضرتكم الإيعاز لمن يلزم لمساعدتها للحصول على المعلومات اللازمة للدراسة من خلال توزيع استبيان، علماً أن المعلومات ستستخدم لغاية البحث فقط وسيتم التعامل معها بغاية السرية، وقد أعطيت هذه الرسالة بناءً على طلبها.

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الملخص

الخلفية: التدريب السريري لطلاب التمريض هو الجزء الأساسي من تطبيق منهج التمريض النظري في درجة البكالوريوس في التمريض، ولكن واجهته العديد من التحديات في الأزمات.

الهدف: هدفت هذه الدراسة إلى تقييم الكفاءة الذاتية، القلق، واستراتيجيات التكيف بين طلاب التمريض الجامعيين، وتقييم أثر التدريب العملي على انطباعاتهم خلال جائحة كوفيد -19.

المنهج: أجريت دراسة مقطعية بين 93 مشاركا. استبيان ذاتي يستخدم لجمع البيانات. تم ترميز البيانات وإدخالها باستخدام ملف Excel للبيانات المقيدة، ثم تم تصديرها إلى برنامج SPSS الإصدار 25 للتحليل. تم حساب الانحدار اللوجستي لمعرفة الارتباطات المحتملة للعوامل مع المتغيرات التابعة وتم الإعلان عن قيم p أقل من 0.05 في التحليل متعدد المتغيرات ذات أهمية.

النتائج: أظهرت الدراسة أن معظم المشاركين 82 (88.2%) لديهم تصور سلبي للتعلم السريري أثناء جائحة كوفيد-19 ولم يكن لدى أحد تصور إيجابي، وشعر الطلاب، في المتوسط، بثقة أكبر بشأن "ارتداء الملابس وإزالتها بشكل صحيح" معدات الحماية" (20.6 ± 77.3 =M) حيث سجل 61.3% 75% أو أعلى على مقياس من 0 (عدم الثقة) إلى 100 (ثقة قوية)، وكان حدث الضغط الرئيسي للطلاب هو "تجربة الضغط من طبيعة ونوعية الرعاية السريرية الممارسة "(2.5 = M ± 1.07). وفقا لسلوك التكيف للمشاركين في CBI كان (10.54 ± 40.08 = M). كان سلوك المواجهة الأكثر شيوعًا الذي استخدمه الطلاب هو حل المشكلات (15.9±4.7=M).

الاستنتاج: كشفت هذه الدراسة أن التأثير المتصور لجائحة كوفيد-19 على معظم طلاب التمريض الجامعيين كان لديهم تصور سلبي للتعلم السريري أثناء الأزمة في الجامعات الفلسطينية. لذلك هناك حاجة إلى استثمارات وتحسينات لضمان تدريب سريري عالي الجودة، واتصال مناسب، ودعم فني للطلاب، بالإضافة إلى استراتيجيات لتعزيز الجانب النفسي، وستكون هناك حاجة إلى أبحاث إضافية لفهم التأثير على التدريب السريري أثناء الأزمات بشكل كامل.

الكلمات المفتاحية: جائحة كوفيد-19، التدريب السريري، طلاب التمريض، الإدراك، الكفاءة الذاتية، التوتر والقلق، استراتيجيات التكيف.