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Erasmus Mundus Joint Master  
Degree in Emergency and

## ERASMUS MUNDUS JOINT MASTER'S DEGREE IN EMERGENCY AND CRITICAL CARE NURSING (EMJMD NURSING)

**“Nursing Students’ intention to do Clinical Practice during Coronavirus Pandemic”**

**Master’s Thesis**

**Othmane Boujeddain,  
February 2022**

**Supervisor: Professor José Amendoeira**



Universidad de Oviedo  
*Universidá d'Uviéu*  
University of Oviedo





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ERASMUS MUNDUS JOINT MASTER'S DEGREE IN EMERGENCY  
AND CRITICAL CARE NURSING (EMJMD NURSING)

**José Amendoeira**; Post-Phd in Nursing by Sao Paulo Brazil, Doctor of education in sociology from the NOVA University of Lisbon, Professor in Polytechnic Institute of Santarém School of Health and local Professor Coordinator of Erasmus Mundus Master Course in Emergency and Critical Care Nursing.

**I Certify** that the Master's Thesis submitted by **Mr. Boujeddain Othmane**, entitled "Nursing Students' intention to do Clinical Practice during Coronavirus Pandemic: Across Sectional Quantitative Study at School of Health Santarém", carried out under the supervision of **Dr. José Amendoeira**, in the Erasmus Mundus Master course in Emergency and Critical Care Nursing, meets the necessary requirements to be approved as Master's Thesis.

And for the record, and for the relevant purposes, the present certification is issued in Oviedo on 13th February, 2022.

Assinado por : JOSÉ JOAQUIM DOS PENEDOS DA  
AMENDOEIRA MARTINS  
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## Abstract

**Introduction:** Coronavirus infections are known as a respiratory virus that cause disease ranging from a normal cold to a severe respiratory syndrome. On 30th January 2019 the world health organization announced the novel coronavirus (covid-19) as a public health emergency of international concern. Nursing education has significantly affected by this pandemic, Nursing students were forced to stop clinical practice for approximately one year and attend only online classes. During the first year of pandemic nursing students' fail to do their clinical practice which is considered mandatory in students' learning experience, the interaction between nursing students and other healthcare workers as well as patients is crucial. However there is a limited number of research evidences regarding the assessment of the nursing students' intention do clinical practice under the existence of covid-19 pandemic.

**Objective:** To examine how nursing students' intention to do clinical practice during covid-19 is influenced.

**Methods:** For the scooping review a literature search of electronic databases and web searching were conducted for published and unpublished articles. Four databases will be utilized: CINAHL, MEDLINE, PubMed and Scopus, Web of Science and Cochrane Library. For the cross-sectional study students under course 33 (3<sup>rd</sup> year) and course 34 (4<sup>th</sup> year) at the school of Health Santarém were selected .Data was collected using online structured self-administered questionnaire (Survey Monkey platform used with license granted by the **Quality Of Life Research Center**, in which the supervisor José Amendoeira is an integrated member) The questionnaire is made up of four sections namely, socio-demographic variables, knowledge of covid-19, students 'perception, intention and readiness to do clinical practice.

**Results:** A total of 84 nursing students from the School of Health Santarém Portugal were included. The majority of responders were female (n=71, 84.5%) with mean age of 22.89 years old (SD=5.0), The duration of exposition to clinical practice was different among participants, 32 (38.1%) students were exposed to clinical practice for a period varying between 5 to 8 weeks, and the remaining 25 students (29.8%) were exposed to clinical practice for a period longer than three months. Furthermore, nursing students at the school of health Santarém showed good knowledge toward coronavirus disease; participants at the aforementioned school answered the majority of questions related coronavirus correctly. Responses related to perception showed that the majority of students 44 (52.4%) are having fear toward coronavirus. However, 62 (73.8%) of the respondents are satisfied with clinical practice during coronavirus time. Concerning the readiness and intention to practice 41 (48.8%) of students

answered that they are ready to practice in clinical area and 31 (36.9%) of students are ready to practice where coronavirus patients exist.

**Conclusion:** Although the existence of Coronavirus Pandemic the nursing students' intention to do clinical practice remains positive. However the variables that influence this intention are changing from one country to another.



# CHAPTER ONE

## 1. INTRODUCTION

### 1.1 Background

Before the development of this research project, the scoping review was done to map the theoretical models, concepts, to identify instruments that will be used for the development of this research project. As a result, the intention of nursing students to do clinical practice during COVID-19 was identified as the main concept and this study aims to understand and describe the different variables affecting that intention. Having a full understanding of how nursing students' intention to do clinical practice is influenced will help to deliver specific intervention, also improve nursing curriculum.

Coronavirus infections are known as a respiratory virus that causes diseases ranging from a normal cold to a severe respiratory syndrome. On the 30th of January 2019 the world health organization announced the novel coronavirus (covid-19) as a public health emergency of international concern (WHO., 2019), because it is considered as a disease with high pathogenicity as well as mortality in comparison to the previous epidemics caused by the coronaviruses (Zaho D et al., 2019).

The WHO declared on the 18th of April 2020 that the ongoing outbreak of Covid-19 affected more than 2164111 persons, also over than 146198 deaths had been recorded in more than 200 countries over the world. The disease is spreading rapidly among people through air droplets that are released during sneezing or coughing (WHO., 2019). Moreover, the virus could spread by physical contact between people such as handshaking, also by touching infected surfaces. In order to combat this serious disease, countries around the world lunched different containment protocols, for instance the closure of main public places, schools, universities, impose curfews and physical distancing measures (Chakraborty I et al., 2020).

The Portugal confirmed the first Covid-19 case on the 26th of February 2020, by the directorate health (Dgs., 2020). On 12 March, Portugal announced the closure of all education institutions from 16 March. Portugal began reopening higher education from 4 May and upper secondary from 18 May; basic education would continue at a distance to the end of the academic year

2019. The higher education has been considerably affected by pandemics, either by the earlier middle East respiratory syndrome (MERS) and SARS (Gu et al., 2015; Huremović, 2019; Wong et al., 2007) or by COVID-19 pandemic, because the uncertainty in terms of dealing with the virus lead all higher education institutions to suspend classes and implement new measures, as a result nursing students were forced to adapt to the new reality that was characterized by online classes and the suspension of clinical practice in different health organizations.

In Nursing Education, the students' learning process characterized by an interconnection between theory and practice. The context of clinical practice considered as an important component to acquire knowledge and skills also to promote reflective practices based on solving-problem situations. The interaction between nursing students and the different stakeholders (teachers, nurse supervisors, health care team professionals...) promote the students' development. Therefore learning that take place in clinical practice has a positive influence on the development of students' autonomy also helps them to build professional experience that has an association with their sociocultural background. Besides, clinical practice considered as an opportunity for nursing students to interact with patients, as a result they can develop specific knowledge that will enable them to diagnose and plan the work that they perform and control themselves (Spínola, A. C., & Amendoeira, J., 2014).

## **1.2 Problem statement**

Covid-19 pandemic started affecting China and different countries since December 2019. The effect of this pandemic on nursing students was really tough in many aspects. The perception of clinical nursing work during the COVID-19 pandemic remain unclear by nursing students, therefore the goal of this research is to assess nursing students' intention to practice in the hospital during covid-19.

Students have been vital resources for health system and society when they were needed; the attendance of nursing students in clinical settings is an inherent element of the nursing education. For instance, at the institute of health Santarém clinical practice considered crucial to improve students' Instrumental and interpersonal skills also it's considered as a way to apply knowledge in practice. Through clinical practice nursing students are having the opportunity to understand and manipulate ideas and thinking; organize time, make decisions and solving problems, gain skills to work in an

interdisciplinary group, improve the ability to communicate with experts in other areas and ethical commitment.

Assessing students' perception of clinical nursing practice will help understand their feeling toward it, also assess their intention either to continue or not continue to work in healthcare field. Moreover, create effective strategies to enhance students' safety during pandemic period or put more focus on simulation to maintain specific skills, meanwhile waiting by the opportunity to come back to clinical practice.

Therefore, the purpose of this study is mainly to know if nursing students' are having either positive or negative intention to practice during covid-19 pandemic. To explore this intention some variables like socio-demographic factors, nursing students' knowledge about coronavirus, nursing students' perception about clinical practice are considered significant.

## CHAPTER TWO

### 2. LITERATURE REVIEW (Nursing students' intention and willingness to practice during covid-19 pandemic)

This section presents the theoretical framework, findings and concepts that are taken from different studies that were included in the scoping review that was based on Joanna Briggs Institute Manual for Evidence Synthesis (Aromataris E, Munn Z., 2020). This scoping was undertaken for mapping of theoretical models, concepts and instruments that will be used for the development of this research project.

In the current study a scoping review was conducted with the goal to identify the latest available scientific evidences on the intention of nursing students to do clinical practice during coronavirus pandemic to answer the review question that was set in the scoping review, to what extent nursing students' intention to do clinical practice is influenced by coronavirus pandemic. Moreover, the present review also aimed to answer the question are nursing students' socioeconomic-demographic variable, knowledge and perception about clinical practice affect their intention to do clinical practice during coronavirus pandemic. This review identified that there are only few research that assess nursing students' intention to carry out clinical practice in coronavirus time.

#### 2.1 Inclusion Criteria

##### **Participants**

This scoping review included studies that discuss the intention of nursing students to practice during covid-19; therefore, the participants of this study are all nursing students who experienced clinical practice

##### **Concept**

The concepts in this proposed review were the assessment of nursing students' intention, clinical practice and covid-19 pandemic.

Due to uncertainty regarding the end of the COVID-19, the return of students to the clinical area was challenging in terms of staff supervision and students safety. Nursing students were obligated to follow and adhere to the new restrictions. As a result, the students' intention to do clinical practice may be affected.

## **Context**

The context of this review was nursing school institutions and hospitals where normally students do their clinical practice.

## **2.2 Types of sources**

The review included both published and unpublished (grey) literatures that were published in English language within the last five years (from 2016 to 2021). The review also included studies that addressed intention among students in line with the review questions. Studies with quantitative methods were included in the review, the incomplete articles such as conference abstract and those articles which their full texts were not accessible, were not included.

## **2.3 Methods**

This scoping review was conducted in accordance with the Joanna Briggs Institute methodology for scoping review (Aromataris E, Munn Z., 2020). .

## **2.4 Search strategy**

Various electronic databases, CINAHL, MEDLINE, PubMed and Scopus, were searched using the pre-determined keywords to find the relevant articles that assess nursing students' intention to practice during the COVID-19 pandemic. Scholar was also used to locate open access articles. The keywords used in the search process include "Nursing students", "intention", "clinical practice", "COVID-19", "pandemic" "Knowledge" and "perception". The Boolean operators "AND" and "OR" were used to combine the keywords to create a focused search in each database. After the process of inclusion and exclusion 9 articles were included as considered to this research (see Prisma Flowchart below).

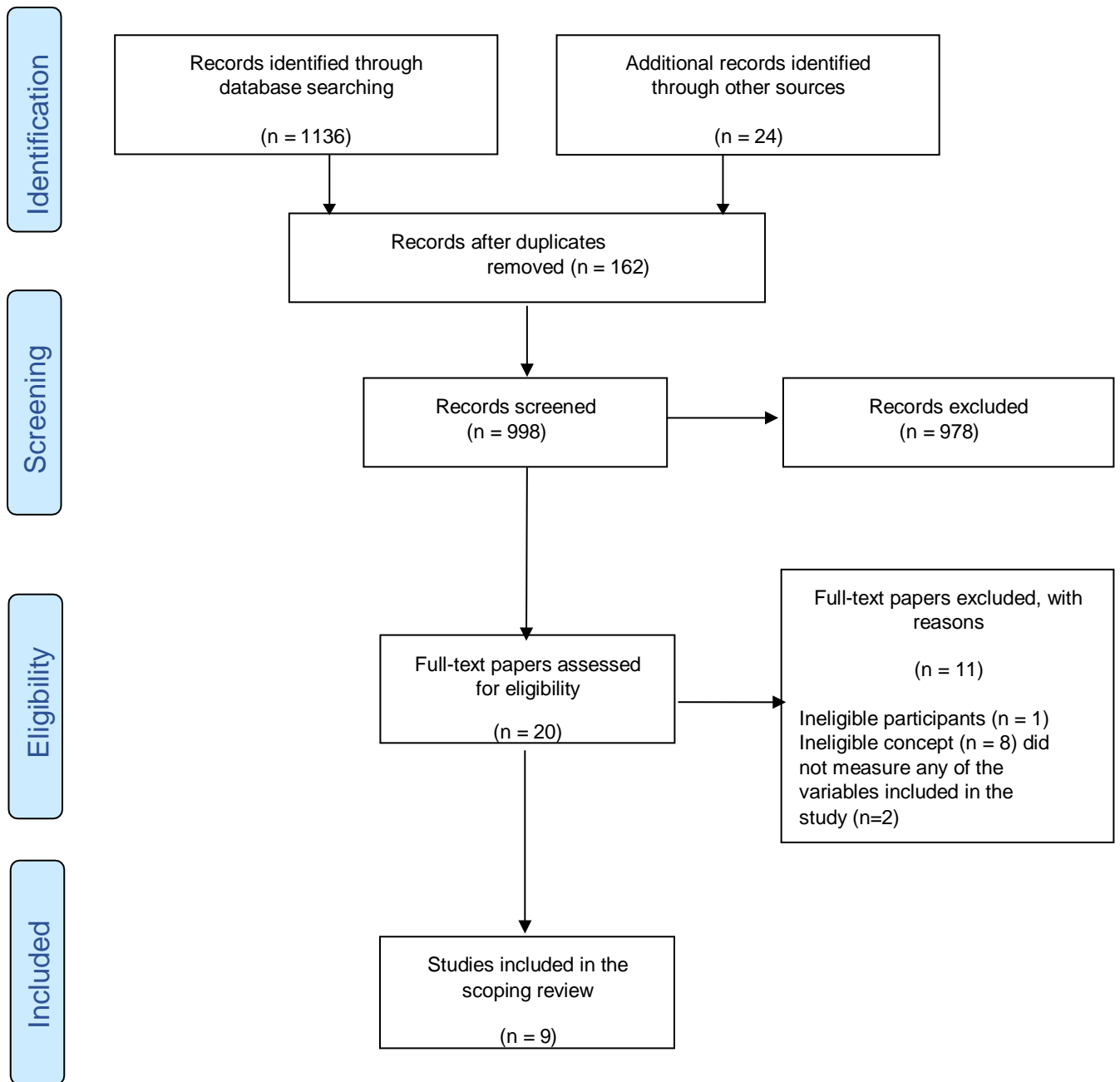
## 2.5 Study selection

The search was performed from the inception of each included databases to the present. The databases to be searched include CINAHL, MEDLINE, PubMed and Scopus. In addition, the review also included unpublished grey literatures from Google scholars as well as Open Grey. The initial search strategy that was used when searching the MEDLINE (PubMed) database is presented in Appendix I.

Following the search, records were identified through Prisma flowchart then uploaded into Mendeley Desktop version 1.19.8 software (see Prisma flowchart below). Titles and abstracts were screened by two independent reviewers for assessment against the inclusion criteria for the review. Potentially relevant studies were retrieved in full and their citation details imported into software. Full text papers that did not meet the inclusion criteria were excluded. Any disagreement that arose between the reviewers was resolved through discussion.

## 2.6 Results

A total of 1136 studies in English language were identified using search strategies, 998 studies were remained after duplicate removed. Titles and abstracts were reviewed against the inclusion criteria, yielding a total of 20 studies for full text analysis; nine articles which met inclusion criteria were included for final review. The flow of articles through identification to final inclusion is represented in Prisma Figure.



PRISMA flowchart of study selection process (Moher, D et al., 2009)

## 2.8 Characteristics of included studies

A total of nine articles published in English language from 2020 to 2021 were included for final review, all of them were primary studies. In terms of country of origin, two articles were undertaken in Nigeria (Nweke et al., 2021)(Helen Abazie, 2021), one in Spain (Andreu-pej et al., 2021), one in Italy (Provenzano et al., 2020), one in Oman (Maskari et al., 2021), one in China (Liu et al., 2021), One in Belgium (Ulenaers et al., 2021), one in Nepal (Banstola et al., 2021) and one in Morocco (Fakhri et al., 2021).

Regarding population a total of 4412 nursing students were studied in all reviewed articles. The maximum included sample size was 1216 students while the minimum included sample size was 237 students. All the nine articles were undertaken using cross-sectional study design.

The included studies in the scoping review varied widely in terms of the instruments' types that have been used to measure nursing students' knowledge toward covid-19 and to assess their perception, intention and readiness to do clinical practice during covid-19 pandemic. Overall, different types of questionnaires have been identified in the included studies, four of which used self-structured questionnaire based on literature review or validated scales to measure nursing students' knowledge, perception and readiness toward clinical practice during COVID-19 Pandemic and five of them used online questionnaires that have been sent either via university E-mail or Whatsapp. In these studies the questionnaires were delivered with the goal to measure nursing knowledge related to Covid-19, moreover, to assess nursing students' intention toward clinical practice covid-19 pandemic.

So it is important to highlight how covid-19 has affected clinical practice, also explore nursing students' knowledge about covid-19 disease. Moreover understand nursing students' readiness and intention to practice during covid-19 pandemic.



## 2.9 The effect of coronavirus on clinical practice

A study was conducted in Belgium shows that approximately half of the students reported that the planning of clinical practice has been affected due to Covid-19 pandemic (Ulenaers et al., 2021). On the other hand, 54.74% of students (n = 364) had the ability to keep up with their clinical placement as planned without any problem. For 36.09% of students (n = 240) the clinical placement ward has changed. For 54.59% of students n = 363 clinical placement was done in a unit free of covid-19 infected patients. However, some students claim that they were assigned to some departments and they were doubtful whether patients are SARS-CoV-19 positive or not (11.28%, n = 75) which may put the students in a tricky situation. Whereas the majority of the students were not directly involved in the care for COVID- 19 patients (n = 446, 67.07%).

Another study was conducted by Helen Abazie (2021) showed that the greater parts of the respondents (59%) had mixed feeling toward coronavirus, 85.3% consider coronavirus as a pandemic. Additionally, 67% wanted to do their clinical practice during coronavirus. Moreover, 88% of students think that coronavirus will change the way how nursing clinical practices are planned and carried out, in the same study a scale of 1–10 was used to see the impact of coronavirus on clinical practice, 46.3% of students answered 7 (significant effect) as the effect of coronavirus on clinical practice in nursing. Almost two third of the respondents (63%) were not satisfied to do clinical practice during coronavirus pandemic. Furthermore, 8.3% of the respondents who were involved in the same study answered that they do not want to carry on clinical practice until coronavirus is gone.

## 2.10 students' knowledge about covid-19 disease

A study was conducted in Italy to explore nursing students' knowledge about covid-19 revealed that 501 participants (95.4%) showed that they have excellent knowledge, whereas 24 (4.6%) of respondents showed low knowledge level about coronavirus disease. Out of 525 participant, 478 (91.1%) are having positive attitude, however 47 (8.9%) nursing students had negative attitude about coronavirus (Provenzano et al., 2020). Larger numbers of participants (89.3%) claim that they are doing good practice to protect themselves from the virus, while only 10.7% reported to have poor practice.

In similar study that took place in southwest Nigeria, the majority of students who were included in the study showed good knowledge about coronavirus (71.3%). However, 28.7% indicated that they have poor knowledge about this disease. The mean  $\pm$  SD of nursing students' knowledge was  $16.16 \pm 1.84$ . In the same study 295 (98.3%) students answered that coronavirus is considered as respiratory disease, 293 (97.7%) answered that coronavirus could spread via respiratory droplets of the contaminated person, and 255 (85.0%) answered that coronavirus propagates by direct contact with a contaminated individual. Only 30 (10.0%) answered that it is not mandatory for children take the necessary measures to prevent themselves from coronavirus. In addition to what was mentioned, 294 (98.0%) of students reveal that to increase the prevention from the virus, crowded places like public transportation and big supermarket must be avoided.

Furthermore, to assess nursing students' knowledge, a study was done in Morocco 82.3%, 69.2% of participants indicated that coronavirus could propagate via droplets that are coming either from the mouth or the nose of contaminated individual, touching contaminated areas and objects respectively (Fakhri et al., 2021). Greater number of students (94.8%) successfully answered the question about the period of incubation of coronavirus which is up to 14 days.

Nearly all the students included in the study (99.3%) are aware that covid-19 is a viral disease. The majority of participants show good knowledge concerning the main symptoms of coronavirus, and the correct answers were as the following, fever (97.6%), dry cough (84.3%), dyspnea (82%) and fatigue (74.9%). Whereas, some symptoms like rhinorrhea and nausea were only recognized by 9.9% and 15.6% of students, respectively, 83.2% and 90.0% of students included in the study are knowledgeable that old people and patients that are suffering from chronic disease are prone to have the severe case of coronavirus compared to normal people, respectively. However, only 20.5% of the respondents considered overweight people under high risk group to have the complication of COVID-19.

### **2.11 Readiness and intention of nursing students' to practice admits coronavirus pandemic**

A study was conducted in the southwest Nigeria also reported that 61.7% of the participants answered that they are ready to practice during covid-19 pandemic (Nweke et al., 2021). However, only 30.7% responded that they are ready to work in the ward where coronavirus patients are. This was in agreement with a the study that was done in the UK (by The Children and Young People

Student Nurse Network (2020)) which shows that 44% of the nursing students are not willing to care for coronavirus patients, 32% of students reported that they need reassurance, and only 2% refused going to clinical practice. A study was conducted by Agarwal et al. (2020) in India, revealed similar results 70% of the 616 students were not ready to do clinical practice because of their fear to be contaminated by the virus (Nweke et al., 2021).

Another study was conducted in Spain by Andreu-pej et al (2021) The whole sample obtained a mean score of 2.83 (95%CI: 2.65–3.01) for the question “to what extent you feel prepared to treat patients with coronavirus disease”?. On the other side, the scores collected for moral responsibility (m = 4.09; 95%CI: 3.96–4.23) and willingness to care for those patients (m = 4.28; 95%CI: 4.16–4.41) were remarkably high, as was their willingness to go on placements in centers with covid-19 patients (m = 3.94; 95%CI: 3.79–4.09). Students indicated that they would not refuse to attend these patients (m = 2.80; 95%CI: 2.63–2.98) and were not afraid of the possibility of coming into contact with a COVID-19 patient (m = 2.95; 95%CI: 2.77–3.12). However, the mean score increased for fear of being infected (m = 3.24; 95%CI: 2.77–3.12) or infecting their family relations (m = 4.59; 95%CI: 4.49–4.68) by coming into contact with these patients (Andreu-pej et al., 2021).

In Belgium (Ulenaers et al., 2021), nursing students were asked about their resilience because of clinical practice, 49.47% of students (n = 329) answered that they have the feeling to maintain a balance between clinical placement and private life without any problem, 24.06% (n = 160) felt unable to maintain this balance because of the negative intention they have toward clinical practice). Furthermore, 66.32% of students (n = 441) responded that they could manage to remain optimistic about what they could contribute during clinical placement, 9.92% (n = 66) of students have a negative feeling about their contribution during clinical placement, and the remaining part was neutral (25.86%, n = 172). In line with what has been mentioned Nepalese nursing students report an increasing prevalence of low and moderate anxiety because of clinical placement during covid-19 pandemic. The percentages of low and moderate anxiety among students were found to be 19% and 81% respectively in this study (Banstola et al., 2021).

## CHAPTER THREE

### 3. METHODS AND MATERIALS

This section will be describing the approaches that will be used to answer the research questions. Polit and Becks, (2008) asserts that research methodology specifically describes the techniques and procedures used to answer the research questions. These approaches will be describing the research design, determination of population size, sampling plan and description of study participants, sampling type, specific instruments used ,data gathering process, Analytic procedures, Methods of operationalizing variables and, Study procedures, including procedures to protect the rights of study participants and limitations.

#### 3.1 Paradigm and Research type

The research to be conducted in this study is quantitative research using a self-administered questionnaire that was developed based on the most recent literature review. Quantitative methods emphasize objective measurements and numerical analysis of data collected on the target population, questionnaires or surveys and that focus on gathering numerical data and generalizing it across groups of people (Muijs D., 2010).

#### 3.2 Research design and settings

According to (Polit & Beck., 2008) ,a research design refers to the researcher's overall plan for obtaining answers to the research questions and testifies the research hypothesis. The researcher chooses the design that is most appropriate to test the study hypotheses or answer the research question (Sharma., 2018).

The research design adopted for this study is a facility based descriptive quantitative study. A descriptive quantitative cross-sectional design is used when researchers seek to describe relationships among variables (e.g. nursing students intention to practice versus socio-demographic viable), without attempting to infer causal connections. It is often an efficient and effective means of collecting a significant amount of data about a problem and help to discover many relationships in a short time (Denise F. Polit & Beck., 2012).

In this study this design is chosen because it will allow the researcher to use a survey questionnaire to explore the relationships and variables (e.g. socio-demographic and knowledge...) that may have an influence on nursing students' intention to do clinical practice in covid-19 time.

The study will be conducted at the school of health Santarém, which is found in Santarém city on Quinta do Mergulhão – Srª da Guia 2005-075 SANTARÉM, Portugal.

The Health School of Santarém succeeded the School of Nursing of Santarém, which was created in 1973, by Decree - Law No. 243/73 of 16 May, embodying the health policy - Create Nursing Schools in all district capitals in order to provide health services, especially in the most peripheral areas, with nursing staff.

Following the Resolution of the Council of Ministers nº 140/98, of 4 December, and within the framework of the approval of Law nº 26/2000, of 23 August, the School was transferred to the exclusive tutelage of the Ministry of Education and was integrated into the Polytechnic Institute of Santarém, through Decree – Law No. 99/2001, of 28 March. The Santarém School of Health succeeded the Santarém School of Nursing, through Normative Order No. 56/2008 of 4 November, which publishes the Statutes of the Polytechnic Institute of Santarém.

#### Human resource at the School of Health Santarém

Category	Bachelor	Master	PhD	Esp.(DL206/2009)
Principal Coordinating Professor	-	-	-	-
Coordinating Professor	-	3	1	0
Adjunct Professor	1	14	10	12
100% Invited Adjunct Professor Adjunct Professor	1	-	-	1
Adjunct Professor in Inter-institutional Mobility	-	1	1	-
Total	2	18	12	13

### 3.3 Research Objective

The study intended to achieve the following objective:

- To examine how nursing students' intention to do clinical practice during covid-19 is influenced.

Based on the literature review certain variables were perceived to have an influence on students' intention. Those variables are Socioeconomic and demographic variables, knowledge toward COVID-19 variable, nursing students' perception about clinical practice variable. Therefore the main objective of this study is to detect any association between nursing students' intention to practice and any of the aforementioned variables.

### 3.4 Research Hypothesis

According to (Gray, Grove, & Sutherland, 2016), a research hypothesis is the predicted relationship between or among variables and it is a testable or predictive statement about the possible outcome of a scientific research study. The hypotheses below will be used to address research questions.

#### **-Null hypothesis**

H<sub>0</sub> – Nursing students' intention to do clinical practice will not be affected because of COVID-19 pandemic.

#### **- Alternative Hypothesis**

Covid-19 pandemic affects nursing students' intention to do clinical practice.

### 3.5 Source population

The population is the complete set of individuals or objects that possess some common characteristic of interest to the researcher (Sharma, 2018). The source population for this study will be all nursing students at the school of health Santarém.

### 3.6 Study population

In this study, all nursing students who are 18 years old or above, had been attending clinical practice in the tertiary level hospitals are the main conditions for participants to be included in the study.

### 3.7 Inclusion criteria

All nursing students who did clinical practice at different units that belong to the tertiary level hospitals (emergency department, surgical departments, medicine departments...).

At the school of health Santarém nursing students from course number 33 (3<sup>rd</sup> year) and 34 (4<sup>th</sup> year) took part of the study population in this research project, because they had training in the aforementioned departments.

### 3.8 Exclusion criteria

Nursing students from the remaining courses were excluded, because at the school of health Santarém, because they did not have any clinical practice at all or they did but in primary level healthcare facilities.

### 3.9 Sample type and sample size determination

The sampling technique adopted for this study is random sampling, specifically all nursing students at the Santarém School who fulfilled the inclusion criteria: being above 18 years old, consented to participate and share their views in the study and accepted to fill the structured questionnaire.

### 3.10 Data gathering procedures

Data was collected using online structured self-administered questionnaires (Survey Monkey platform used with license granted by the **Quality Of Life Research Center**, in which the supervisor José Amendoeira is an integrated member), which are mainly adopted from the previous studies that were undertaken using English language; however the questionnaire was translated to Portuguese language by a sworn translator in order to avoid any language misunderstanding that the students may face. All respondents were provided with research information at the beginning of the questionnaire describing what is involved in the study. A consent form attached after the information part. The respondent cannot start responding the questions unless they accepted to participate in this study. The data was collected by the main investigator through survey monkey and translated again by a sworn translator from Portuguese to English.

### 3.11 Research variables

#### Independent variables

- Gender (Male, Female)
- Age
- Marital status (single, Married, others)
- Study year (course 33 : 3<sup>rd</sup> Year/ course 34: 4<sup>th</sup> Year)
- Economic level
- Living area ( Village, City)
- The duration of exposition to clinical practice ( In weeks)
- Nursing students' knowledge level about covid-19 infection
- Nursing students perception of clinical practice

These variables are included in this study because they are assumed to be the main variables that can affect nursing students' intention to do clinical practice and they are also essential variables to answering the research question.

#### Dependent variable

The dependent variable in this study is the intention of nursing students to practice during covid-19 pandemic.

### 3.12 Operationalization and instrument structure

The questionnaire consists of four different sections, which include socio-demographic characteristics. The second section has 19 items to test students' knowledge about covid-19 disease. Part three includes seven questions with the goal to know students' perception of clinical practice. Part four contain 6 questions that measure nursing students' intention and readiness to do clinical practice during coronavirus pandemic among nursing students.

### 3.13 Data management

The collected data was checked for its completeness, consistency, and accuracy and entered into SPSS version 27.0.1 for analysis. Descriptive statistics were done to summarize the socio-demographic characteristics, knowledge related to coronavirus, nursing students' perception about the clinical practice during coronavirus pandemic and students' intention to develop clinical practice during the pandemic time.



### **3.14 Legal and Ethical Procedures**

Before starting data collection in the half of November 2021, ethical clearance and permission letter were obtained from the ethical committee at THE RESEARCH UNIT OF POLYTECHNIC INSTITUTE OF SANTARÉM. The data collectors explained the objectives, contents and importance of the study before starting to fill the questionnaires, and Consent to carry out the study in the health school was sought before inviting the students to participate in the study. The participants were informed of the time that the result will be disseminated confidentiality of personal information was assured and data collected shall be used only for the purpose of this study.

## CHAPTER FOUR

### 4. RESULTS

#### 4.1 Characteristics of participants

A total of 84 nursing students from the health school of Santarém Portugal were included. The majority of responders were female (n=71) with mean age of 22.89 years old, (SD=5.0), single (89.3%), concerning the area of living 50% are living in the city, whereas the other half are living in the village. The exposition to clinical practice was different among participants, 32 (38.1%) students were exposed to clinical practice of a period varying between 5 to 8 weeks, and the remaining 25 students (29.8%) were exposed to clinical practice for a period longer than three months (Table 1).

*Table 1 Characteristics of participants*

Variable	Frequency
Gender	
Male	14 (16.7%)
Female	71 (84.5%)
Age (years)	
18-22	62 (73.8%)
23-26	10 (11.9%)
>27	12 (14.3%)
Marital status	
Single	75 (89.3%)
Married	5 (6.0%)
Others	4 (4.8%)
Study course number	
33 (3 <sup>rd</sup> year)	43 (51.2%)
34 (4 <sup>th</sup> year)	41 (48.8%)
Economic level	
Low	13 (15.5%)
Normal	69 (82.2%)
High	2 (2.4%)
Living area	
City	42 (50%)
Village	42(50%)
How many weeks have you been exposed to clinical practice	
1-4 weeks	9 (10.7%)
5-8 weeks	32 (38.1%)
9-12 weeks	18 (21.4%)
>12 weeks	25 (29.8%)

## 4.2 Nursing students' knowledge about covid-19 infection

On the evaluation of students' knowledge, 66 (78.6%) answered that coronavirus is considered as a respiratory problem, all of the students 84 (100%) responded that Coronavirus spreads through respiratory droplets of infected individuals and 76 (90.5%) indicated that coronavirus spread by having a direct contact with contaminated surfaces and objects. Moreover, 82 (97.6%) answered that isolation and treatment of people who are infected with coronavirus is the most effective way to reduce the spread of the virus. However, only 6 (7.1%) responded that Persons with coronavirus cannot infect others when a fever is not present. Meanwhile, 67 (79.7%) of participants indicated that the avoidance of going to crowded places such as train stations public transportations considered essential to limit the spread of the virus ( Table 2).

*Table 2 Nursing students' knowledge about covid-19 infection*

Items	True	False	I don't know
Coronavirus is a respiratory disease	66 (78.6%)	18 (21.4%)	0 (0.0%)
Clinical symptoms of coronavirus are fever, fatigue, dry cough, and myalgia	75 (89.3%)	8 (9.5%)	1 (1.2%)
Unlike the common cold, stuffy nose, runny nose, and sneezing are less common in persons with the coronavirus	75 (89.3%)	8 (9.5%)	1 (1.2%)
Currently, there is no effective cure for coronavirus, but early symptomatic and supportive treatment can help most patients recover from the infection	73 (86.9%)	3 (3.6%)	8 (9.5%)
Not all persons with coronavirus will develop to severe cases	83 (98.8%)	1 (1.2%)	0 (0.0%)
Only the elderly infected persons and those with chronic illnesses are more likely to be severe cases	11 (13.1%)	73 (86.9%)	0 (0.0%)
Eating or contact with wild animals would result in the infection by the Coronavirus	3 (3.6%)	68 (81.0%)	13 (15.5%)
Persons with coronavirus cannot infect others when a fever is not present	6 (7.1%)	77 (91.7%)	1 (1.2%)
Coronavirus spreads through respiratory droplets of infected individuals	84 (100%)	0 (0.0%)	0 (0.0%)
Coronavirus spreads by direct contact with infected persons	72 (85.7%)	10 (11.9%)	2 (2.4%)
Coronavirus spreads by contact with contaminated objects and surfaces	76 (90.5%)	7 (8.3%)	1 (1.2%)

Coronavirus spreads by handshake with infected persons	59 (70.2%)	18 (21.4%)	7 (8.3%)
Ordinary residents can wear general medical masks to prevent the infection by coronavirus	78 (92.9%)	3 (3.6%)	3 (3.6%)
It is not necessary for children and young adults to take measures to prevent the infection by coronavirus	2 (2.4%)	82 (97.6%)	0 (0.0%)
To prevent the infection by coronavirus, individuals should avoid going to crowded places such as train stations and avoid taking public transportations Isolation and treatment of people who are infected with coronavirus are effective ways to reduce the spread of the virus	67 (79.8%)	9 (10.7%)	8 (9.5%)
Isolation and treatment of people who are infected with coronavirus are effective ways to reduce the spread of the virus	82 (97.6%)	2 (2.4%)	0(0.0%)
People who have contact with someone infected with the coronavirus should be immediately isolated in a proper place	78 (92.9%)	3 (3.6%)	3 (3.6%)
An infected person may show symptoms within 2 to14 days	80 (95.2%)	3 (3.6%)	1 (1.2%)
There is no proven cure for COVID-19	80 (95.2%)	4 (4.8%)	0 (0.0%)

### 4.3 perception of clinical practice with coronavirus among nursing students

Responses related to perception showed that slightly more than half of students 44 (52.4%) are having fear toward coronavirus, 71 (84.5%) are considering coronavirus as pandemic, 39 (46.4%) students believe that coronavirus changed the way of teaching during clinical practice. Moreover, on the scale of 0 (no effect) to 10 (major effect), 43 (51.2%) students selected 7 (significant effect) as the degree of coronavirus effect on clinical practice. Although, 68 (81%) of students indicated that they want to continue their clinical practice in coronavirus time. Concerning the satisfaction with clinical practice during coronavirus time, 62 (73.8%) of the respondents are satisfied (Table 3).

Table 3 perception of clinical practice with coronavirus among nursing students

Variable	Frequency
Type of feeling you have when coronavirus is mentioned	
Fear	44 (52.4%)
Anger	15 (17.9%)
Nothing	25 (29.8%)
Which of the following words will you use to describe coronavirus disease	
Pandemic	71 (84.5%)
Epidemic	1 (1.2%)
None of the above	4 (4.8%)
All of the above	8 (9.5%)
I do not want to go for clinical practice again because of coronavirus	
Yes	5 (6.0%)
No	68 (81%)
I do not know	11 (13%)
Coronavirus disease would change the way the following nursing practice will be carried out	
Clinical practice	19 (22.6%)
Clinical teaching	39 (46.4%)
Clinical supervision	11 (13.1%)
Clinical examination	1 (1.2%)
Clinical communication	14 (16.7%)
On a scale of 1 to 10, how would you grade the effect of coronavirus on clinical practice in nursing	
3 (slight)	3 (3.6%)
5 (Moderate)	21 (25%)
7 (Significant)	43 (51.2%)
10 (Major)	17 (20.2%)
How satisfied are you with clinical practice with the present situation caused by coronavirus disease Satisfied	
Very satisfied	7 (8.3%)
Satisfied	62 (73.8%)
Not satisfied	12 (14.3%)
No idea	3 (3.6%)
I do not feel like continuing with my clinical practice in nursing because of the coronavirus	
Yes	7 (8.3%)
No	71 (84.0%)
I do not Know	6 (7.1%)

#### 4.4 The intention to do clinical practice during coronavirus pandemic among nursing students

Concerning the assessment of nursing students' preparedness to attend clinical practice, 41 (48.8%) students are ready to practice in clinical area and 31 (36.9%) students are ready to practice where coronavirus patients exist. Beside, more than the half of students 49 (58.3%) indicated that personal protective equipments are necessary to practice where coronavirus patients exist. However 48 (57.1%) refuses to practice without a special training in terms of dealing with coronavirus patients.

*Table 4 the intention to do clinical practice during coronavirus pandemic among nursing students*

Item	Definitely %	Very probably %	Probably %	Possibly %	probably not %	Definitely not %
Are you prepared to practice in the clinical area	4 (4.8%)	37 (44%)	30 (35.7%)	12 (14.3%)	1 (1.2%)	0 (0.0%)
Are you prepared to practice where there are coronavirus patients:	9 (10.7%)	22 (26.2%)	37 (44.0%)	16 (19.0%)	16 (19.0%)	0 (0.0%)
If specially trained on infection control/ infectious diseases will you be able to practice where there are coronavirus patients	26 (31.0%)	33 (39.3%)	16 (19%)	7 (8.3%)	1 (1.2%)	1 (1.2%)
If specially equipped with the necessary PPEs will you be able to practice where there are coronavirus patients	22 (26.2%)	27 (32.1%)	15 (17.9%)	16 (19.0)	4 (4.8%)	0 (0.0%)
if no special training will you be able to practice where there are coronavirus patients	1 (1.2%)	3 (3.6%)	10 (11.9%)	22 (26.2%)	32 (38.1%)	16 (19.0%)
If no special equipment PPEs will you be able to practice where there are coronavirus patients:	3 (3.6%)	2 (2.4%)	12 (14.3%)	67 (79.8%)	0 (0.0%)	0 (0.0%)

#### 4.5 Association between variables

The association between variables was determined by CHI square with 95% CI and at P-value <0.05. The study results showed that no significant relationship existed between either age, gender marital status, living area, economic level, knowledge about covid-19 and the intention of nursing students to do clinical practice in the school of health Santarém. However, the number of years spent in the school of health was found to be significantly associated with nursing students' intention to practice in the clinical setting. This study revealed that respondents who belong to course 33 (3rd year) are having positive intention and more willingness to practice compared to the students under course 34 (4th year).

*Table 5 association between the intention of nursing students to do clinical practice and the independent variables*

Variables	Students intended to practice	Students not intended to practice	X <sup>2</sup> P-value
Age (years):			0.64
18-22	32 (38.0%)	30 (35.7%)	
23-26	5 (5.9%)	5 (5.9%)	
>27	4 (4.7%)	7 (8.3%)	
Gender:			0.69
Male	7 (8.3%)	6 (7.1%)	
Female	34 (40.4%)	37 (44.0%)	
Marital status:			0.76
Married	36 (42.8%)	38 (45.2%)	
Single	2 (2.3%)	3 (3.5%)	
Others	2 (2.3%)	1 (1.1%)	
Living area:			0.51
City	19 (22.61%)	23 27.3	
Village	22 (26.1%)	20 (23.8%)	
Economic level:			0.71
Low	5 (5.9%)	8 (9.5%)	
Normal	35 (41.6%)	34(40.4%)	
High	1 (1.1%)	1 (1.1%)	
Course study:			0.009
Course 33 (3 <sup>rd</sup> year)	27 (32.1%)	16 (19.0%)	
Course 34 (4 <sup>th</sup> year)	14 (16.6%)	27 (32.1%)	
Students knowledge about covid-19:			0.10
Good knowledge	28 (33.3%)	22 (64.7%)	
Poor knowledge	13 (15.4%)	21 (25.0%)	

## 5. Discussion

The purpose of our study was to assess the intention of nursing students to do clinical practice during covid-19 pandemic. The main findings of the study showed that more than half of the students have a positive intention to practice during covid-19 pandemic; level of knowledge towards covid-19 was good. Besides, it has been shown that there is a significant association between the students' intention to practice and the number of years spent at the school of health Santarém, this study results are similar to the one conducted in Nigeria by Helen Abazie, (2021), which revealed that nursing students' intention to do clinical practice is influenced considerably by the number of year spent at the school of health, respondents who belong to course 33 (3<sup>rd</sup> year) are having positive intention and more willingness to practice compared to the students under course 34 (4<sup>th</sup> year).

Nursing students at the School Of Health Santarém showed good knowledge about covid-19 disease; participants at the aforementioned school answered the majority of questions related coronavirus correctly, n=82 (97.6%) of participants reported that, Isolation and treatment of people who are infected with coronavirus are the most effective ways to reduce the spread of the virus. Moreover more than 85% of the participants answered correctly all the questions related to way the way of covid-19 transmission. Similarly, In Nigeria, the larger part of nursing students are aware that covid-19 is a respiratory disease, aware also about the different ways of transmission, the majority of participants indicated that the only way to stop the spread of the virus is adherence to medication as well as isolation (Helen Abazie, 2021). In line to what has been mentioned, Fakhri et al, found in their study that nursing students in Morocco are also have good knowledge related to COVID-19 disease, most of participants (94.8%) correctly identified the incubation period of this new virus. The majority (92.8%) of students were in an agreement that isolation and quarantine are effective way to reduce the transmission of this virus, 96.2% of them responded that social distancing is crucial to control the spread of the virus.



However, regardless of the level of knowledge that the nursing students in Nigeria showed, their intention to practice during covid-19 pandemic remained relatively low (Helen Abazie, 2021). According to the same research study, only a small number of participants have a positive perception to come back doing clinical practice, also the majority indicated that they are not satisfied to care for a covid-19 patient. Unlike to the study that was conducted in Nigeria, Moroccan nursing students show their interest to participate to care for covid-19 patients, 81.8% of the participants confirmed that they are ready to provide care for patients with covid-19 disease. Similar results were reported by the students in Santarém school of health, n=65 (81%) respondents want to continue their clinical practice despite the existence of coronavirus pandemic. Besides, n=69 (82.1%) of respondents in Santarém school of health indicated that they are satisfied with their clinical practice in the current situation.

Spanish nursing and medical students show that they have a suitable level of knowledge About the route of transmission, symptoms /signs and the population at risk of covid-19 virus. Likewise, they are well informed about the variety of measures that could be taken in order to stop the transmission among people (Provenzano et al., 2020). Provenzano et al, found in their research study that the willingness of Spanish students to do clinical placement during with covid-19 is high. Approximately, 95% of participants agree to provide care for patients affected with coronavirus. However, the mean score increased for panic and worry to be affected by the virus. High level of fear that was reported by students wasn't because of the contact with covid-19 patient, but the majority of students 95% are living with their families so they were afraid to bring the virus at home. In moreover, Omani nursing students demonstrated also good knowledge toward covid-19, nearly 60% of the population included in the study achieved high knowledge score (agree and strongly agree) for 16 of the 22 items on the knowledge scale. However the majority of students at the school of health Santarem 79 (94.1%) were in doubt either to work with covid-19 patient if they were not supplied with appropriate personal protective equipment (PPE), besides, they expressed the need for specialized training to improve their competencies and skills to care for corona virus positive patient (Maskari et al., 2021).

Therefore at the school of health Santarém, comprehensive understanding of infection prevention and control is mandatory for students to protect themselves, colleagues as well as patients. Personal protective equipment (PPE) -- such as gloves, aprons and/or gowns, and eye protection -- is essential to control the spread of the virus also to ensure nursing students safety. A clear understanding about the use of PPE will enable nurses to be confident in terms of dealing with

patients and reduce any unnecessary cost. Through special training at the school of health Santarém students will have the opportunity to improve their skills in the appropriate way to use PPE and enhance their confidence in terms of dealing with patients during covid-19 pandemic.

In terms of clinical practice perception, nursing students at the school of health Santarém showed that the majority of students are in agreement with the fact that the pandemic caused by covid-19 has affected nursing teaching in many ways specifically clinical teaching and clinical practice, 19 (22.6%) and 39 (46.4%) students reported that covid-19 has affected clinical practice and clinical teaching respectively. However, more than the half of participants reported that they are ready to attend clinical practice during the pandemic with the condition to be provided with the personal protective equipments, also training related to infections control reported by students to be essential to practice during the coronavirus pandemic. Those results were in an agreement to what have been reported in the Omani research project.

## Conclusion and recommendation

To sum up, it was found that nursing intention to do clinical practice is not influenced by age, gender, marital status, living area and knowledge about covid-19. However, the present study showed that the intention is significantly influenced by the number of years spent at the school of health. Additionally, nursing students report to have fear toward covid-19 infection. Therefore, academic authorities should work with the students to develop some coping strategies in order to reduce that fear. The global pandemic has opened opportunities for all the countries to improve the educational system. Higher education institutions of health thereby required to seize the opportunity to strengthen its evidence-based practices, provide psychological assistance for the students and update the curriculum and make it flexible so it changes when the situation and condition are changing too. It may be also crucial to incorporate competences into curricula to enhance knowledge, attitudes and practices of the future health care professionals and to prepare them in the appropriate way to be ready for any future emergencies and outbreaks.

**Recommendation:**

- ❖ Nursing education: since nursing students are willing to practice and having high satisfaction about clinical practice, preventative practices must be thought to ensure the safety and the wellbeing of nursing students.
- ❖ Nursing practice: nursing students must attend special training in terms of dealing with patients with contagious respiratory disease, in order to increase their safety and well-being. Also to prepare them to any emergency or future outbreak.
- ❖ Nursing research: further research must be conducted in other countries to have better understanding about how nursing students' intention is influenced by covid-19 pandemic.

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Conflict of interest

The authors declare that there is no conflict of interest.

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## APPENDIX I PubMed Research Tool

PubMed search conducted on September 10/2021, Time 10:15

Search	Query	Records retrieved
#1	Nurs* students OR "student in nurs*" Or "undergraduate Nurs*"	276228
#2	"intention to practice" OR "intention to do clinical practice" OR "calinical practice intention "	250650
#3	"coronavirus pandemic" OR "pandemic" OR "coronavirus" OR "covid-19" OR "covid" OR "COVID-19" OR"Sars-cov"	310527
#4	#1 AND #2 AND #3	192
Limited from 2016 to present and written in English		

## APPENDIX II ETHICAL APPROVAL

Ethical Approval from the ethical committee (Santarém school of health)



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### DECLARAÇÃO

#### COMISSÃO DE ÉTICA DA UNIDADE DE INVESTIGAÇÃO DO IPSANTARÉM

EMISSÃO DE PARECER 08.A-2021ESSS

Identificação do Investigador | Othmane Boujddain

Identificação do Projeto | *The Intention of Nursing Students to Practice during COVID-19 Pandemic*

Tendo-se verificado que o preenchimento dos seguintes requisitos solicitado no parecer anterior, nomeadamente:

- 1) Apresentação do consentimento informado no início do questionário salvaguardando o anonimato;
- 2) Redação do questionário em português e inglês;
- 3) Esclarecimento, por escrito, quanto à proteção de dados pessoais:
  - a) Qual o suporte (físico ou digital) e quem tem acesso aos mesmos durante a investigação?
  - b) Existe garantia de serem eliminados todos os elementos, físicos ou em formato digital, de identificação nominal ou contacto dos participantes?
  - c) Como vai ser feita a divulgação dos resultados (por referência a pessoas ou grupos anonimizados)?
- 4) Especificação mensal do cronograma.

Somos de parecer positivo que este projeto de natureza académica cumpre os requisitos éticos inerentes ao respeito pela autonomia dos participantes, para o período consignado no cronograma e a clarificação do acesso à investigação.

Santarém, 10 de dezembro de 2021

Pedro Oliveira

(Coordenador)

Rafael Oliveira

(Subcoordenador)

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## APPENDIX III QUESTIONNAIRE PORTUGUESE VERSION

### **Muito obrigado por ter decidido participar no questionário**

Este inquérito eletrónico, através do Survey Monkey, integra um estudo de investigação no âmbito da elaboração e desenvolvimento de uma Dissertação de Natureza Científica, no âmbito do EMJMD-Nursing, Emergency and Critical Care.

O questionário é composto por um conjunto de questões de diferentes tipos:

- Variáveis dicotómicas
- De escolha múltipla
- Opção por uma das variáveis, exclusivamente
- Escala numérica (valorativa)

Solicito a colaboração no sentido de responder a todas as questões, sugerindo que o questionário possa ser lido na totalidade, antes de assinalar as respostas.

Este inquérito integra:

- Informação à Participação Livre e Esclarecida
- Declaração de consentimento informado - Questionário

Othmane Boujeddain

Escola Superior de Saúde de Santarém | Unidade de Monitorização de Indicadores em Saúde | UMIS\_UI\_IPSAntarem|AC-SIC-LQRC

## **Informação à Participação Livre e Esclarecida**

**Intenção dos Estudantes de Enfermagem no desenvolvimento do estágio durante o COVID-19**

**Caro estudante convidado para fazer parte do estudo de investigação no âmbito do EMJMD-Nursing, Emergency and Critical Care.**

**A responsabilidade deste estudo é de Othmane Boujeaddin, sob a supervisão do Professor Coordenador José Amendoeira (PhD/Pós-Doc), Escola Superior de Saúde-Instituto Politécnico de Santarém. Este estudo encontra-se ao abrigo da emissão de parecer pela Comissão de Ética da Unidade de Investigação do Instituto Politécnico de Santarém, em 15 de outubro de 2021.**

**A participação neste estudo é inteiramente voluntária e nenhuma penalização recairá a quem decidir não participar nem a quem decidir retirar-se ou recusar continuar a participar em qualquer momento da pesquisa. Se aceitar fazer parte no estudo, ser-lhe-á solicitada a resposta a este questionário.**

**Os registos da participação neste estudo serão confidenciais. Serão usados Códigos de identificação em todos os dados registados e transcritos, sendo o acesso aos mesmos da exclusiva competência de mim próprio e do supervisor da Dissertação de Natureza Científica.**

**Após a leitura desta informação, se surgir alguma dúvida, por favor sinta-se livre para contactar o investigador para [othmane.otey@gmail.com](mailto:othmane.otey@gmail.com) ou através do telefone +34677262635 .**

Conforme a lei 67/98 de 26 de Outubro e a “Declaração de Helsínquia” da Associação Médica Mundial (Helsínquia 1964; Tóquio 1975; Veneza 1983; Hong Kong 1983; Somerset West 1996, Edimburgo 2000; Washington 2002, Tóquio 2004, Seul 2008, Fortaleza 2013),  
Designação do Estudo: Intenção dos Estudantes de Enfermagem no desenvolvimento do estágio durante o COVID-19

Fui informado de que o Estudo de Investigação acima mencionado se destina a obtenção de grau académico.

Sei que neste estudo está prevista a realização de um questionário, tendo-me sido explicado em que consiste.

Sei que os dados produzidos, serão mobilizados apenas pelo investigador principal e supervisor do estudo. O anonimato é garantido pela forma de acesso (através de link gerado pela interface do Survey Monkey) ao mesmo.

Foi-me garantido que todos os dados relativos à identificação dos Participantes neste estudo são confidenciais e que será mantido o anonimato.

Sei que posso recusar-me a participar ou interromper a qualquer momento a participação no estudo, sem nenhum tipo de penalização por este facto.

Compreendi a informação que me foi dada, tive oportunidade de fazer perguntas e as minhas dúvidas foram esclarecidas.

Aceito participar de livre vontade no estudo acima mencionado

Também autorizo a divulgação dos resultados obtidos no meio científico, garantindo o anonimato.

Após leitura e concordância com o termo de consentimento informado que teve oportunidade de ler na página anterior,

Para prosseguir deve seleccionar SIM em «Aceito participar»

\* 1. Aceito Participar

Sim

Não

# QUESTIONÁRIO

Nome dos investigadores: Othmane Boujeddain, Supervisor José Amendoeira (Post-PhD)

Questionário número: \_\_\_\_\_

Olá, sou um estudante Erasmus + num Mestrado conjunto em Enfermagem de Emergência e Cuidados Críticos e desenvolvo uma dissertação sobre a Intenção dos Estudantes de Enfermagem no desenvolvimento do estágio durante o COVID-19. Está disponível para responder a algumas perguntas?

Este questionário é anónimo; não há resposta certa ou errada, apenas a sua opinião conta.

### Primeira Parte: Variáveis Sócio-Económicas

1. Qual é a sua idade

\_\_\_\_\_

2. Sexo

Masculino

Feminino

3. Estado Civil

Solteiro

Casado

Outro

4. Número de cursos

33

34

5. Qual o seu nível sócio económico

baixo

normal

alto

6. Onde vive

cidade

aldeia

7. Durante quantas semanas desenvolveu a prática clínica

\_\_\_\_\_

### Parte 2: O conhecimento dos estudantes de enfermagem acerca da infeção Covid-19

1. O coronavírus é uma doença respiratória

verdadeiro

falso

não sei

**2. Os sintomas clínicos do coronavírus são febre, fadiga, tosse seca e mialgias:**

verdadeiro

falso

não sei

**3. Ao contrário da gripe comum, nariz entupido, nariz a pingar e espirros, são menos comuns em pessoas com coronavírus:**

verdadeiro

falso

não sei

**4. Atualmente, não existe cura eficaz para o coronavírus, mas o tratamento dos primeiros sintomas pode ajudar a maioria dos doentes a recuperar da infeção:**

Verdadeiro

falso

não sei

**5. Nem todas as pessoas com coronavírus desenvolvem casos severos:**

verdadeiro

falso

não sei

**6. Somente as pessoas mais idosas infetadas e as que têm doenças crónicas, estão mais propensas a desenvolver casos mais graves:**

verdadeiro

falso

não sei

**7. Comer ou estar em contacto com animais selvagens resulta em infeção por coronavírus:**

verdadeiro

falso

não sei

**8. Pessoas com coronavírus não podem infectar outros, quando não têm febre:**

verdadeiro

falso

não sei

**9. O coronavírus propaga-se através de gotículas respiratórias de indivíduos infectados:**

verdadeiro

falso

não sei

**10. O coronavírus propaga-se pelo contato direto com pessoas infectadas:**

verdadeiro

falso

não sei

**11. O coronavírus propaga-se pelo contato com objetos e superfícies contaminadas:**

verdadeiro

falso

não sei

**12. O coronavírus propaga-se pelo aperto de mão, com pessoas infectadas:**

verdadeiro

falso

não sei

**13. Pessoas comuns podem usar máscaras médicas gerais para prevenir a infecção por coronavírus:**

verdadeiro

falso

não sei

**14. Não é necessário crianças e jovens adultos usarem medidas para prevenir a infecção pelo coronavírus:**

verdadeiro

falso

não sei

**15. Para prevenir a infecção pelo coronavírus, as pessoas devem evitar estar em lugares lotados, como estações de comboio e evitar utilizar transportes públicos:**

verdadeiro

falso

não sei

**16. Isolamento e tratamento de pessoas infetadas com coronavírus são formas efetivas de reduzir a propagação do vírus:**

verdadeiro

falso

não sei

**17. Pessoas que tenham contato direto com alguém infetado com coronavírus devem ser imediatamente isoladas num local adequado:**

verdadeiro

falso

não sei

**18. Uma pessoa infetada pode revelar sintomas entre 2 a 14 dias:**

verdadeiro

falso

não sei

**19. Há uma cura comprovada para a Covid-19:**

verdadeiro

falso

não sei

### **Parte 3: Variáveis relacionadas com a perceção, sobre o coronavírus entre estudantes de enfermagem, no ensino clínico.**

**1. O que sente, quando se fala em coronavírus:**

Medo

Raiva

Nada



**2. Qual das seguintes palavras utilizaria para descrever a doença por coronavírus:**

Pandemia

Epidemia

Nenhuma das referidas

Todas as referidas

**3. Não quero voltar para a o ensino clínico devido ao coronavírus:**

Concordo

Não concordo

**4. A doença por coronavírus mudará a forma como a seguinte prática de enfermagem será realizada:**

Práticas laboratoriais  Ensino clínico

Supervisão clínica  Avaliação inicial  Comunicação no Ensino clínico

**5. Numa escala de 1 a 10, que nota daria ao efeito do coronavírus no ensino clínico em enfermagem:**

5  7  10

**6. Quão satisfeito está com o ensino clínico, devido à atual situação causada pela doença coronavírus:**

Muito satisfeito

Nada satisfeito

Não faço ideia

**7. Não estou com vontade de continuar o meu ensino clínico de enfermagem devido ao coronavírus:**

Sim

Não

Não sei

#### Parte 4: Variável relacionada com a intenção para o ensino clínico durante a pandemia de coronavírus, em estudantes de enfermagem

1. Até que ponto está preparado para a prática na área clínica:

Muito bem    Bem    Aceitável    Pouco    Muito pouco

2. Até que ponto está preparado para atuar onde há doentes com coronavírus:

Muito bem    Bem    Aceitável    Pouco    Muito pouco

3. Se for especialmente formado em controlo de infeção/doenças infecciosas, poderá atuar onde existirem doentes com coronavírus:

Definitivamente    Muito provavelmente    Provavelmente

Possivelmente    Provavelmente não    Definitivamente não

4. Se devidamente equipado com o EPI, será capaz de atuar onde existam doentes com coronavírus:

Definitivamente    Muito provavelmente    Provavelmente

Possivelmente    Provavelmente não    Definitivamente não

5. Sem formação específica, será capaz de atuar onde existam doentes com coronavírus:

Definitivamente    Muito provavelmente    Provavelmente

Possivelmente    Provavelmente não    Definitivamente não

**6. Sem utilizar EPI, será capaz de atuar onde existam doentes com coronavírus:**

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Definitivamente	Muito provavelmente	Provavelmente
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Possivelmente	Provavelmente não	Definitivamente não

Obrigado pela sua participação.

## APPENDIX IV: SCOPING REVIEW

# The intention of nursing students to practice during COVID-19 pandemic Case: Santarém School of Health Sciences

Othmane Boujeddain<sup>1</sup>, professor José Amendoeira<sup>2</sup>

<sup>1</sup>EMJMD student at University of Oviedo, Spain, Registered nurse at the University hospital Med6 Marrakech

<sup>2</sup>Investigador Sénior | UI\_IPSantarem | ESSS\_UMIS (Coordinator) | Investigador Colaborador CIEQV at ESCOLA SUPERIOR DE SAÚDE DE SANTARÉM, Santarem, Portugal.

**Objective:** The objective of this scoping review to identify the most recent scientific evidence that assess nursing students' intention to do clinical practice during COVID-19 pandemic.

**Introduction:** Coronavirus infections are known as a respiratory virus that cause disease ranging from a normal cold to a severe respiratory syndrome. On 30th January 2020 the world health organization announced the novel coronavirus (COVID-19) as a public health emergency of international concern. Nursing education has significantly affected by this pandemic, Nursing students were forced to stop clinical practice for approximately one year and attend only online classes. During the first year of pandemic nursing students' fail to do their clinical practice which is considered mandatory in students' learning experience, the interaction between nursing students with other healthcare workers and patients is crucial. However there is a limited number of research evidences regarding the assessment of the nursing students' intention to do clinical practice under the existence of COVID-19 pandemic.

**The inclusion criteria:** for the searched articles, there were full-text articles in English language from 2016 to 2021. The review further included studies that addressed nursing students' knowledge, perception toward COVID-19 disease also nursing students' intention to practice at the hospital during COVID-19 pandemic. Studies with quantitative methods were included in the review.

**Methods:** A literature search of electronic databases and web searching were conducted for published and unpublished articles. Four databases will be utilized: CINAHL, MEDLINE, PubMed and Scopus, Web of Science and Cochrane Library. Studies collected from web searching Google and Google Scholar will be also included.

## Introduction

Coronavirus infections are known as a respiratory virus that cause disease ranging from a normal cold to a severe respiratory syndrome. On 30th January 2019 the world health organization announced the novel coronavirus (covid-19) as a public health emergency of international concern (WHO, 2019), because it is considered as a disease with high pathogenicity as well as mortality in comparison to the previous epidemics caused by the coronaviruses (Zaho D et al, 2019).

The WHO declared on 18th April 2020 that the ongoing outbreak of Covid-19 affected more than 2164111 people, also over than 146198 deaths had been recorded in more than 200 countries over the world. The disease is spreading rapidly among people through air droplets that are released during sneezing or coughing. Moreover, the virus could spread by physical contact between people such as greeting, also by touching infected surfaces. In order to combat this serious disease, countries around the world lunch different containment protocols, for instance the closure of main public places, schools, universities, impose curfews and physical distancing measures (Chakraborty I et al., 2020).

The Portugal confirmed the first Covid-19 case on the 26th of February 2020, by the directorate health (Dgs, 2020). The 12th March 2020, was the day when the Portuguese government decided to close all the education institutions. Then just a few days later the Portugal republic declared the state of emergency in all the country.

The higher education have been considerably affected by pandemics, either by the earlier middle East respiratory syndrome (MERS) and SARS (Gu et al., 2015; Huremović, 2019; Wong et al., 2007) or by covid-19 pandemic, because the uncertainty in terms of dealing with the virus lead all higher education institutions to suspend classes and implement new measures, as a result students were forced to adapt to the new covid-19 restrictions that were set by the government.

Nursing education characterized by theoretical classes as well as clinical placement. Both allow to the nursing students to get the necessary attitudes, skills and knowledge in order to provide appropriate nursing care (Neda P et al, 2016). Clinical experience considered a vital component in nursing education and this influence the learning process in nursing students, for the fact that students can observe directly during clinical placement what they have studied in the theoretical class (Msiska G et al, 2014).

For an effective clinical learning experience, the interaction between nursing students, with other health care workers as well as patients is considered mandatory because this daily

interaction could simplify the learning process for nursing student also help them to transit from a student to a healthcare professional after graduation (Msiska G et al, 2014). The learning environment at the hospital has plenty of advantages for nursing students. By the presence of covid-19 pandemic an up to date understanding of nursing students' intension to practice during this pandemic is required, especially this interesting area of research still lacking in many countries.

The published studies in Portugal about the impact of covid-19 pandemic on higher education still rare, Portuguese nursing students faced an increasing challenge characterized by the suspension of clinical practice, which represent up to 50% of their syllabus. Moreover, the online learning put these students in a troublesome situation in comparison to face to face learning. For nursing students, online classes' attendance has decreased considerably, together with their interest to them. A study was conducted in Portugal announced that nursing students need more energy for an online class compared to presencial class, also 40% of students in this study reported to have high level of anxiety and stress due to isolation and lockdown (Xavier B et al, 2020).

### **Justification**

Covid-19 pandemic started affecting China and different countries since December 2019. The effects of this pandemic on nursing students were really tough in many aspects. The perception of clinical nursing work during the COVID-19 pandemic remains unclear by nursing students. Therefore, the goal of this research is to assess nursing students' intention and willingness to practice in the clinical area during covid-19 pandemic.

Students have been vital resources for health system and society when they have been needed; the attendance of nursing students in clinical settings is an inherent element of the nursing education. Assessing students' perception of clinical nursing work will help understand students' feeling toward clinical placement, also assess their intention either to continue or not continue with nursing job. Moreover, create effective strategies to enhance students' safety during pandemic period while doing clinical practice.

### **Research Objective**

The study intended to achieve the following objective:

- To examine how nursing students' intention to do clinical practice during covid-19 is influenced.

Based on the literature review certain variables were perceived to have an influence on students' intention. Those variables are Socioeconomic and demographic variables, knowledge toward COVID-19 variable, nursing students' perception about clinical practice variable. Therefore the main objective of this study is to detect any association between nursing students' intention to practice and any of the aforementioned variables.

The keywords used in the search process include "Nursing students", "intention", "clinical practice", "COVID-19", "pandemic" "Knowledge" and "perception". The Boolean operators "AND" and "OR" were used to combine the keywords to create a focused search in each database. After the process of inclusion and exclusion 9 articles were included as relevant to this research.

### **Research Questions**

1. Do Socioeconomic and demographic variables have an impact on nursing students' intention to do clinical practice?
2. Does nursing students' knowledge about covid-19 affect their intention to do clinical practice during covid-19 pandemic?
3. Does nursing students perception of clinical practice is influenced in the covid-19 time
4. Are nursing students ready to practice during COVID-19 pandemic?

### **Inclusion Criteria**

#### **Participants**

This scoping review included studies that discuss the intention of nursing students to practice during covid-19; therefore, the participants of this study are all nursing students who did clinical practice.

#### **Concept**

The concepts in this proposed review were the assessment of nursing students' intention, clinical practice and covid-19 pandemic.

Due to uncertainty regarding the end of the COVID-19, the return of students to the clinical area was challenging in terms of staff supervision and students safety. Nursing students were obligated to follow and adhere to the new restrictions. As a result, the students' intention to do clinical practice may be affected.

### **Context**

The context of this review was nursing school institutions and hospital where normally students carry their clinical practice.

### **2.2 Types of sources**

The review was considered both published and unpublished (grey) literatures that published in English language within the last five years (from 2016 to 2021). The review further included studies that addressed intention among students in line with the review questions. Studies with quantitative methods were included in the review, the incomplete articles such as conference abstract and those articles which their full texts were not accessible, were not included.

### **2.3 Methods**

This scoping review was conducted in accordance with the Joanna Briggs Institute methodology for scoping reviews.

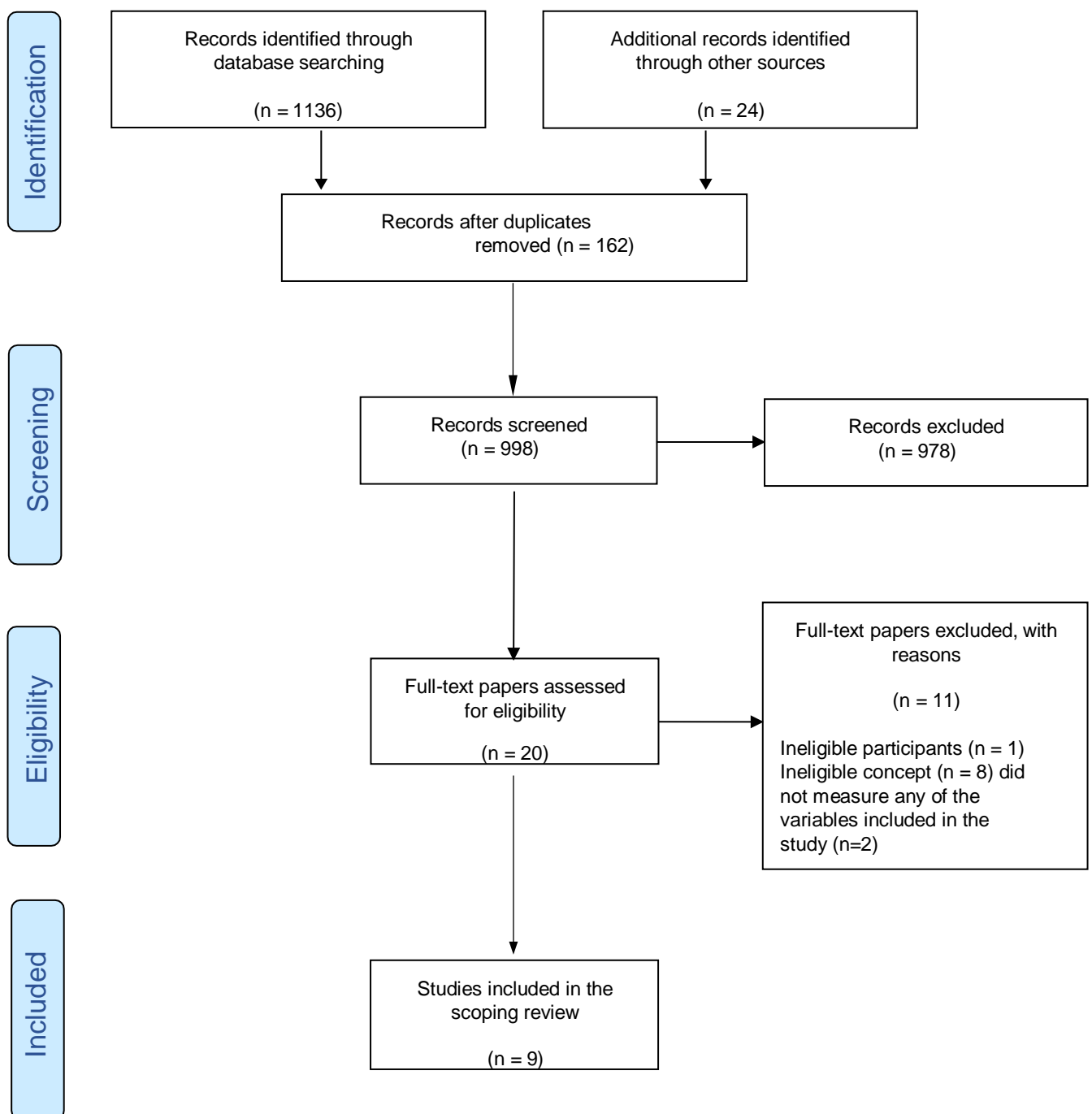
### **2.4 Search strategy**

Various electronic databases, CINAHL, MEDLINE, PubMed and Scopus, were searched using the pre-determined keywords to find the relevant articles that assess nursing students' intention to practice during the COVID-19 pandemic. Scholar was also used to locate open access articles. The keywords used in the search process include "Nursing students", "intention", "clinical practice", "COVID-19", "pandemic" "Knowledge" and "perception". The Boolean operators "AND" and "OR" were used to combine the keywords to create a focused search in each database (see the table below). After the process of inclusion and exclusion 9 articles were included as relevant to this research.



## Results

A total of 1136 studies in English language were identified using search strategies, 998 studies were remained after duplicate removed. Titles and abstracts were reviewed against the inclusion criteria, yielding a total of 20 studies for full text analysis; nine articles which met inclusion criteria were included for final review. The flow of articles through identification to final inclusion is represented in Prisma Figure.



PRISMA flowchart of study selection process (Moher, D et al., 2009)

## Data extraction

Data was extracted from papers included in the scoping review by two independent reviewers using a data extraction tool developed by the reviewers. The extracted data include specific details about the population (Nursing students), concept (clinical practice, Nursing students' intention to practice, covid-19 Pandemic) context (Nursing Health School, Clinical Practice), methods and key findings relevant to the review question. Components reviewed include origin of study, type of study, methods, findings related with the intention of nursing students to practice during covid-19 Pandemic. A draft extraction tool is provided.

Authors (year)	Titles	Aims	Origins	Types of research	Sample size	Instrument	Design	Statistical analysis	Findings	Limitations
Turkiya S. Al Maskari et.al (2021)	Using the Theory of Planned Behavior to assess nursing and allied health students' knowledge and intention to care for patients with COVID-19	To assess nursing and allied health students' demographics, Knowledge and intentions to care for patients with an infectious disease, COVID-19	Oman	primary study	480 of nursing and allied health students	Mann–Whitney and Spearman's correlation tests.	A quantitative, cross-sectional study.	The Mann–Whitney-Spearman's correlation coefficients - The STROBE checklist for observational research studies	Senior students had greater knowledge of COVID-19 compared to junior students the intentions to care for COVID-19 patients.  A significant negative correlation was noted between knowledge and intent to care for patients with COVID-19  The overload of COVID-19 information on social media since the pandemic started may have contributed to these negative intentions.	This study was conducted in one governmental public college focused on providing nursing and allied healthcare education.  Therefore, the results cannot be generalized to students in other colleges in Oman.
Ogechi Helen Abazie et.al (2021)	Coronavirus: Nursing Students' Knowledge and Risk Perception of Clinical Practice during the Pandemic	The study assessed nursing students' perception of clinical practice amidst coronavirus pandemic in southwest Nigeria..	Nigeria	primary study	300 nursing students	A questionnaire was developed after the literature review, made up of three sections	A quantitative, cross-sectional study	Statistical Package for Social Science used for data analysis (SPSS) software version 20. Descriptive and inferential statistics were presented in tables	The study confirmed that that 71% of the nursing students are having good knowledge about COVID-19. Majority of the nursing students responded that coronavirus leads to a serious respiratory problem and both isolation and treatments of the infected people with coronavirus considered effective ways to reduce the transmission of the virus. However, despite the level of knowledge shown about COVID-19, only a few above the average of the population had a positive perception of returning to clinical practice with the COVID-19 pandemic.	Limited generalizability, cross sectional nature, small sample size,
Xiao-Feng Liu et. al (2021)	Current Situation Analysis of Nursing Students' Professional Attitudes and employment Intentions during COVID-19 Pandemic	To understand the status of nursing students' professional attitudes, professional identity, and employment intention under the new coronary pneumonia pandemic, and to analyze the factors influencing nursing students' employment intention.	China	primary study	689 nursing students	designed a questionnaire based on the actual situation, which mainly contains 4 parts	A quantitative, cross-sectional study	multiple unordere d and ordered regression  IBM SPSS Statistics v26	The results of this study reveal that although COVID-19 pandemic has affected nursing profession and students to some extent, nursing students in the context of the pandemic still mostly choose to work in clinical nursing. 47.17% of the nursing students chose to work in clinical nursing in the future; 95.5% of the nursing students preferred to work in grade III class hospital hospitals; 0.73% of the nursing students actively chose to work in the infectious disease unit in the background of COVID-19 pandemic.	cross sectional nature, Limited generalizability the study was conducted on 2 universities but the sample size still low

Nada Fakhri, et al. (2021)	COVID-19 and Moroccan nursing students: A multicenter cross-sectional survey on their related knowledge, attitudes and practices	To assess knowledge, attitudes and practices of Moroccan nursing students towards COVID-19	Morocco	primary study	1,216 nursing students	online questionnaire consisted of demographic characteristics and 24 items about COVID-19-related knowledge, attitudes and practices.	A quantitative, cross-sectional study	Data analysis was performed using SPSS software, version 20. The results were presented as frequencies and percentages.	The main findings of the study showed that most of the participants had a good knowledge and attitudes towards COVID-19, and an acceptable level of practices to prevent and avoid the contamination with COVID-19.	Students had access to online correct COVID-19 information resources, which may have influenced their responses to COVID-19 knowledge. Second, participating in this survey required Internet access; therefore, participants without Internet access were not able to complete the questionnaire.
Desir'ee Mena-Tudela et.al (2021)	Spanish nursing and medical students' knowledge, confidence and willingness about COVID-19: A cross-sectional study	To study Spanish Nursing and Medical students' knowledge about COVID-19 community transmission prevention measures, treating infected patients, and their confidence and willingness to treat cases. To learn their views about the first public health policy measures adopted by the Spain government to contain the pandemic.	Spain	primary study	237 Spanish Nursing and Medical students	An online questionnaire was designed on the knowledge, confidence and willingness to treat covid patient	A quantitative, cross-sectional study	the Mann-Whitney U test for comparison and SPSS V21 software was used for statistical analysis	Students indicated that they would not refuse to attend patients with covid19 (m = 2.80; 95%CI: 2.63–2.98) and were not afraid of the possibility of coming into contact with a COVID-19 patient (m = 2.95; 95%CI: 2.77–3.12). However, the mean score increased for fear of being infected (m = 3.24; 95%CI: 2.77–3.12) or infecting their family relations (m = 4.59; 95%CI: 4.49–4.68) by coming into contact with these patients	The sample size was limited and not stratified according to university degrees (Nursing or Medicine). Also the combination in the sampling between nursing and medical student considered as limitation because the two groups are having different background.

C.I. Nweke et. al (2021)	Readiness for clinical practice amidst coronavirus among nursing students in southwest Nigeria	To assess readiness on resumption for clinical practice amidst coronavirus pandemic among Nursing students in South-West Nigeria.	Nigeria	primary study	300 Nursing students	Is a self-structured tool, developed after literature review by the authors.	A quantitative, cross-sectional study	SPSS) Version 22, was used for data analysis  Hypotheses were tested using Chi-square at a significant level of $p = 0.05$	61.7% of the participants were ready for clinical practice, 92(30.7%) were ready to nurse coronavirus patients. There is a significant difference between nursing institutions and readiness for clinical practice $p = 0.000$ . There is no significant difference between years of clinical exposure and readiness for clinical practice $p = 0.594$	This study was limited by the prevailing situation orchestrated by the coronavirus pandemic which includes the lockdown and social distancing. These factors equally compelled the use of Google forms for data collection thereby limiting the study beyond the researchers' control also the study was also limited to a nominal scale of measurement with only YES/NO options
Bidhya Banstola et. al (2021)	Anxiety among Nursing Students towards Clinical Placement during COVID-19 in a Tertiary Hospital of Nepal: A Descriptive Cross-sectional Study	This study aimed to find out the prevalence of anxiety among nursing students towards clinical placement in the pandemic of COVID-19 in a tertiary care hospital	Nepal	primary study	144 nursing students	COVID-19 related and Beck Anxiety Inventory questionnaires was used for assessing anxiety	C/sectional	Statistical Package for the Social Sciences (SPSS) software 16 for analysis. The data were analyzed using descriptive statistics like frequency, percentage, mean and standard deviation.	All the nursing students 144 (100%) having clinical placement in the pandemic of COVID-19 had anxiety. All 144 (100%) nursing students coping strategies for anxiety during clinical placement. Among them, 117 (81%) had mild anxiety and 27 (19%) had a moderate level of anxiety	Cross sectional nature of the study and small sample size.

Dorien Ulenaers et al (2021)	Clinical placement experience of nursing students during the COVID-19 pandemic: A cross-sectional study	To study nursing students' experiences during clinical placement during the COVID-19 pandemic. Design: Cross-sectional survey design.	Belgium	primary study	665 Nursing students from nine Belgian nursing schools.	Online questionnaire comprised five dimensions	Cross-sectional survey design	Descriptive analysis according to the distribution appropriate measures of central tendency and dispersion  <i>t</i> -test,) and chi-square test	The COVID-19 pandemic affected clinical placement planning for less than half of the students; most students could continue their clinical placement as planned. The perceived risk of becoming infected with the SARS-CoV-2 virus during clinical placements was on average $46.79 \pm 27.56$ (on a scale of 0 to 100), 57.74% of the respondents estimated the risk to be at least 50%. This was higher than the perceived risk of becoming infected outside the clinical placement site ( $39.04 \pm 25.24$ ), for which 44.51% of the respondents estimated the risk to be at least 50% ( $P < 0.001$ ). Being actively involved in the care for COVID-19 patients significantly influenced the risk perception of becoming infected with the SARS-CoV-2 virus ( $58.71 \pm 26.86$ vs $42.31 \pm 26.94$ , $P < 0.001$ ). The perceived likelihood of infecting others (on a scale of 0 to 100) was as follows: patients ( $42.34 \pm 27.74$ , 49.47% at least 50%), other caregivers ( $41.57 \pm 27.86$ , 47.67% at least 50%), and family members ( $43.72 \pm 29.97$ , 51.28% at least 50%). See Table 1 for an overview	Secondary analysis of data collected for other purposes, and as such, some desired variables were not available.
Provenzano et al., 2020	COVID-19 infection: comparing the knowledge, attitude and practices in a sample of nursing students	The aim of the study was to evaluate the knowledge, attitude and practices towards SARS-CoV-2 among the nursing students of University of Palermo during the rapid rise period of the COVID-19 pandemic	Italy	Primary Study	525 students were interviewed and their mean age was 21.8	The questionnaire consisted of two parts: demographics and Knowledge, Attitude and Practices (KAP) survey	This cross-sectional survey was conducted on March 2020 the week immediately after the lockdown of Italy	statistical significance level chosen for all analyzes was 0.05. The results were analyzed using the STATA statistical software version 14 (12). Results are expressed as adjusted Odds Ratio (aOR) with 95% Confidence Intervals (95% CI).	A total of 501 (95.4%) respondents showed good knowledge while 24 (4.6%) of nursing students had poor knowledge of SARS CoV-2. Of 525 respondents, 478 (91.1%) showed positive attitude while 47 (8.9%) participants displayed negative attitude about SARS CoV-2. The majority of the studied sample (89.3%) reported good practice and 10.7% reported poor practice. For more details see Table 2 that shows the demographic characteristics of the participants. Table 3 shows bivariate associations between knowledge, attitude, practice score and years of university course attended. The overall score indicates good practices among first year (93.9%), second year (87.6%), third year (85.3%) showed statistically significant ( $p=0.025$ ). No statistically significant results were showed for the overall score of knowledge and attitudes.	

