Arab American University

Faculty of Graduate studies

Knowledge, Attitude, And Practice of Emergency Nurses in Palestinian Governmental Hospitals About Cardiopulmonary Resuscitation for Covid 19 Patients.

By

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Supervisor

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The thesis was submitted in partial fulfillment of the requirement for the Master's degree in Emergency Nursing

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The Study's Authorization Page and The Examinee's Signature

Approval form

Knowledge, attitude, and practice of emergency nurses in Palestinian Governmental hospitals about Cardiopulmonary resuscitation for COVID 19.

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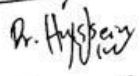
2.	Dr. Husain Jabareen	External Examiner	
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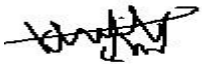
Declaration

I declare that this study is the result of my own work research, except where otherwise indicated. It has been submitted for Master degree.

Signed: 

Khalil . I . Shawamri

Date: 4/11/2021

Acknowledgement:

To complete my study, I were needed a help and support from all who I know. So, I would like to thank everyone who spent any effort for helping me.

So, I dedicate this work to my lovely parents who support me all the time of study, also I would thank my brothers, sisters and friends for helping me and encouraging me to complete my study.

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Finally, to all nurses who were being a part of my study, thanks from my heart.

Khalil . I . Shawamri

Abstract

This study was **aimed** to assess the emergency nurse's knowledge, attitude and practice (KAP) toward CPR for Covid_19patient in Palestinian West Bank governmental hospital; it discussed the approach of dealing with CPR cases according to AHA new Covid_19CPR guidelines.

Method: The study includes all nurses who work in emergency departments in all Palestinian West Bank governmental hospitals, they were 230 nurses. A Quantitative cross-sectional descriptive study was used to evaluate the nurses KAP throughout self-administered questioner in time period of 1st march to the 15th may.2021. In order to analyze the response of study participants throughout descriptive statistics (mean, standard deviation S.D).

Results: There were a 42% of Palestinian governmental emergency nurses had a moderate level of knowledge toward CPR for Covid_19 patients, for the attitude dimension, there were a 48,1% of nursing had a neutral attitude toward CPR for the Covid_19 patients, and 56% of study participants had a good level of practice toward CPR for Covid_19clients.

Conclusion: There was a significant relation between gander, employment status and previously trained for CPR with the perception of practice with a p value <0.05.

Recommendation: The study enhanced the continuing education committee and empower their roles in all Palestinian hospital, also follow some strict policies, measures for CPR to improve nursing and staff team commitment of implementing AHA protocols and finally, establishing a protocol all nurses who will be accepted to work in emergency department must have at least basic life support(BLS).

Keywords: Emergency nurse, cardiopulmonary resuscitation (CPR), Covid_19 patients, American Heart Association (AHA).

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Chapter One: Introduction

1.1 Introduction

According to World Health Organization (WHO.2019) nurses are the shape of health care institution and they are professionals who cover and work in a cooperative way to deliver the best care for individuals of all groups, families, ages and communities in all locations. They should take in account of illness prevention and health promotion. According to the last report of the Palestinian Ministry of Health (MOH) , there are 3580 nurses in Gaza strip and 7879 nurses in West Bank, with a total of 11459 nurse in Palestinian hospitals (MOH, 2018).

In December 2019, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), starts from Wuhan, China, which has been identified as cause of pandemic, resulting in millions cases of deaths world widely (Ramzy et al., 2020). In March 2020, the first case was discovered in Palestine, especially in Bethlehem city (Qutob et al.,2020).

The coronavirus (Severe Acute Respiratory Virus Syndrome) (SARS_CoV2), has been spreading quickly world widely, infecting more than 3 million people as of April 27, 2020 and had a death over 211,000 lives. 27.8% of patients have an evidence of myocardial injury with mortality among hospitalized patients as high as 69.4% (Raukar et al., 2019). In these days, especially in 12 March 2021, there have been 118,754,336 confirmed cases of COVID_19, including 2,634,370 deaths, reported to WHO all around the world (WHO. 2021).

In occupied Palestinian territory, including east Jerusalem, from 3 January 2020 to 12 March 2021, there have been 232,665 confirmed cases of COVID_19with 2,467 deaths, reported to WHO (WHO. 2021).

There were many studies globally attended to assess the nurse's knowledge, attitude and practice toward CPR in general, my study could be the first one which studied the emergency nurses KAP toward CPR for Covid_19 patients. Many literatures talked about how we can deal with CPR not matter the type of cases, in emergency departments (EDs), the traditional method of rush up to a critically ill client on his side for providing a life-saving procedures or a resuscitation must be well-adjusted with the risk of getting infected with a serious illness mainly Covid_19.

This makes an ethical tension between the health care worker's right to protection and duty to treat the patients (Criag et al., 2020). But the American Heart Association conducted a new algorithm for dealing with Covid_19CPR cases.

Corona virus disease (Covid_19) "is an illness caused by a virus that can spread from person to person". The novel coronavirus disease (Covid_19) is a respiratory viral disease that had rapidly spread globally. It was associated with an international pandemic, largely because of its rapid distribution; it is likely that emergency nurses will encounter patients with known or suspected Covid_19. "(Adams et al., 2020)". SARS-Cov_19 symptoms can range from no symptoms to severe illness" (CDC, 2019).

Sudden cardiac arrest is a catastrophic medical emergency that may occur at any time in the hospital or pre-hospital setting" (Phill et al., 2016). Cardiopulmonary Resuscitation (CPR)" is an emergency lifesaving procedure performed when the heart

stops beating. Immediate CPR could double or triple chances of survival after cardiac arrest." (AHA. 2020)

This research aimed to assess the emergency nurses' knowledge, attitude and practice toward Cardiopulmonary resuscitation for Covid_19 patients in the West Bank of Palestinian governmental hospital.

1.2 Justification:

My study talked about how we can assess the emergency nurses' knowledge, attitude and practice toward Cardiopulmonary resuscitation for Covid_19 patients in the West Bank of Palestinian governmental hospitals.

Approximately 12% to 19% of Covid_19positive patients required a hospitalization, and 3% to 6% become critically ill cases. Myocardial injury (MI), Ventricular arrhythmias, hypoxic Respiratory, and shock are common in Covid_19 patients. They influenced patients to cardiac arrest. Also, some of the proposed treatments such as Hydroxychloroquine which prolonged the QT interval. With infections currently growing up in the United States and internationally, the percentage of patients with cardiac arrests would increase (Edelson et al., 2020).

I had chosen this topic due to current pandemic disease Covid_19all around the world. And in our country, there is a lack of researches and papers that aimed to assesses the nurses' knowledge, attitudes, and practice toward CPR for Covid_19in Palestinian governmental hospitals in West Bank. In addition, the lack of CPR information leads to hard observing and assessing the KAP in order to improve CPR performance, policies, and protocols.

On the other hand, no study was examining the nursing staff KAP toward CPR for Covid_19. So, there is a need for more studies to assess health care preparedness for CPR in all Palestinian hospitals.

1.3 Problem Statement：

All nurses deal with the patients in a traditional way when they rush to help or resuscitate a client despite that the client was infected with Covid_19or not, this traditional way could affect the health care team health status, also many of our emergency nurses should be aware for the new recommendations when dealing with the CPR in the emergency department (Edelson et al.,2020).

A previous study revealed that the knowledge and practice of BLS among nurses were low (Kelkay et al., 2018). However, up to my knowledge, after searching for different databases, no studies in Palestine have examined nurses' knowledge, attitude, and practice toward CPR for Covid_19 patients. Therefore, the current study was aimed to assess the emergency nurses' knowledge, attitude, and perception of practice toward CPR for Covid_19 patients in Palestinian West Bank governmental hospitals.

1.4 Significance of The Study:

The main and important thing is staff safety, while still providing the best possible care for Covid_19 patients who needs resuscitation. Nurses should balance between use of personal protective equipment (PPE) and the need to stability the CPR without being infected with Covid_19 virus. In recognition that the most of cardiac arrests

may not due to COVID_19 infection and early CPR with defibrillation could increase the survival rate for the victim.

Also, it will make the policy makers and administrates in health institutions to increase their preparedness and compliance with AHA new COVID_19CPR guidelines. It will integrate the new AHA guidelines in curriculum of medical, surgical, pediatric, maternity and other courses in the Baccalaureate Nursing Programs (BSN). It will produce a data base for researchers in future researches.

1.5 Study Purpose:

The aim of this study is to evaluate the emergency nurses KAP toward CPR for Covid_19 patients in Palestinian West Bank governmental hospitals. This study discussed the approach to cardiac arrest management in emergency department based on AHA new Covid_19 CPR Guidelines.

1.6 Research Questions:

1. What is the level of emergency department nurse's knowledge about cardiopulmonary resuscitation for Covid_19 patients in Palestinian Governmental hospitals at West Bank?
2. What is the level of emergency department nurse's attitude toward cardiopulmonary resuscitation for Covid_19 patients in Palestinian Governmental hospitals at West Bank?

3. What is the level of emergency department nurses' perception of practice toward cardiopulmonary resuscitation for Covid_19 patients in Palestinian Governmental hospitals at West Bank?
4. What are the predictors of perception of practice toward cardiopulmonary resuscitation for Covid_19 patients in Palestinian Governmental hospitals at West Bank?

1.7 Conceptual Framework

Conceptual framework was defined and scientifically organized to provide an interpretation of information. This research framework was used to discover the Nurses' knowledge, attitudes and practice toward CPR for Covid_19 patients.

This study uses the "KAP" classic model to assess the emergency department nurses knowledge, attitude and practices toward CPR for Covid_19 patients. It utilities the informative analysis of the study participants.

Nurses' knowledge is assessed to see if there is an agreement between nurses' public knowledge that matches to the medical impressions.

Attitude according to Oxford vocabulary defined as a firm, or constant way of thinking or feeling about someone or something, typically one that were reflected in a person's behavior, it consists of and need a product of a complex interaction of beliefs, thoughts, skills, feelings, and values (Rayyan.L,.2020).

In KAP surveys, practices frequently discuss about the use of defensive interventions or different health care options in order to achieve study aims (Rayyan.L,.2020).

1.7.1 Study dependent variables

- Knowledge
- Attitudes
- Practice

1.7.2 Study independent variables

Age, marital status, gender, level of education which are considered as demographic variables and a work-related characteristic as follow (employment status, current position, duration of working experience, the length of working in the current emergency department, last training sessions, certified American Heart Association).

1.7.3 Conceptual and operational definitions

- Knowledge: is defined as familiarity, awareness, or understanding gained through experience or study (Rayyan.L.2020).
- Attitudes: is personal or mental view toward activities, object, person or something. Or it is a set of emotions, believes, and behavior when caring for something (Rayyan.L.2020).
- Practice: means the action of doing something regularly or frequently to promote your skill in some work (Rayyan.L.2020).

1.7.4 Operationally, knowledge, attitudes, and practices of nurses about CPR for Covid_19 patients are assessed by questions in the self-administered questionnaire, it will be explained in the methodology chapter.

1.7.5 Study Framework:

The study framework was drawn to be suitable for my thesis project; it describes the variable that could affect the CPR outcome for Covid_19clients as in Figure 1 below:

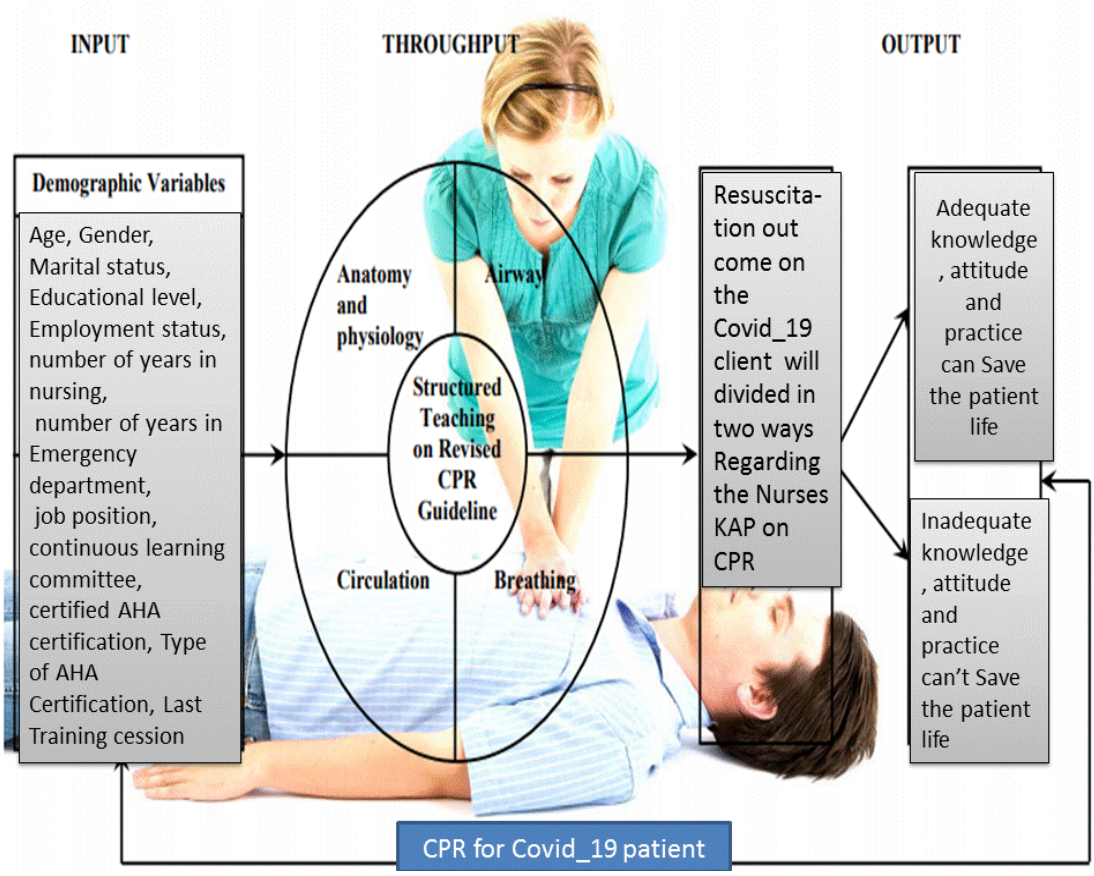


Figure **1:** This figure shows the related confiding variables related affect on emergency nurses KAP to deal with CPR for Covid_19 patients**.**

2. Chapter two: Literature Review

2.1 **Introduction**

In this chapter, I was reviewed the previous literature about CPR that related to perception of nurses toward knowledge, attitudes, practices (KAP). Due to limited studies and researches available world widely on my topic, i had looked over the literatures that is mostly related to my subject especially American Heart Association guideline, European guideline, and New Zealand Resuscitation Council (Australia) for dealing with CPR for Covid_19 patients, and i reviewed other articles that are related to it.

The mechanisms of cardiovascular failure seen in infected Covid_19clients, such as, destabilized coronary plaques, and hypoxia, also Covid_19can cause directly infiltrates to the myocardium and pericardium layers of the heart, resulting in myocarditis or pericarditis and reduced systolic function, which can cause a cardiac arrest for these patients (Raukar etal.,2019).

2.2 Regional and Local Studies

According to the researcher knowledge, there is no study in Palestinian governmental hospitals relating directly to assess the nurse's knowledge, attitude, and practice toward CPR or toward CPR for Covid_19 patients.

2.3 Arab States Studies

There are some researches on the Arab world countries, such as Egyptian interventional study included 65 nurses that were being conducted in Suleiman AL Rajhi Colleges which has been published in 2019. The study aimed to assess the cardiopulmonary resuscitation knowledge and experiences between emergency department nurse's hospital pre and post basic life support training course (Taha et al., 2019). The study discovered that 73% of nurses don't have previous teaching activity. 27% of the nurses hadn't any information about CPR and 22.5% of them gained their information through training program. While the 94.6% of them aimed to attend CPR training program. The study concluded that Nurses' knowledge, skills and performance to CPR increased (Taha etal.,2019).

Another descriptive cross-sectional study with purposive sample of (85) nurses, those who were working in the coronary care unit, intensive care unit, emergency unit, respiratory care unit was conducted in University of Kufa - Al-Najaf city in Iraq which aimed to assess the nurses' knowledge towards Cardiopulmonary resuscitation at Al-Najaf City's teaching Hospital (Al-Janabi et al., 2014). The study revealed that nurses had poor knowledge about CPR. There was no significant association between the participants (nurses) knowledge toward CPR procedure and their age and gender. The researchers concluded that the majority of the nurses had poor knowledge concerning cardiac arrest and CPR (Al-Janabi et al., 2014).

2.4 International Studies

Researchers investigate the articles world widely and carried it out without focusing only on assessing nursing knowledge, attitude, and practice toward CPR for

Covid_19, but also assessing CPR all patients. So, i discussed the articles that talked about CPR for non Covid_19and for Covid_19 patients.

An international study talked about management of adult cardiac arrest in the Covid_19, harmony declaration from the Australasian College concluded that prioritization of rapid defibrillation and attention to reversible causes of cardiac arrest remain critical interventions (Craig et al., 2020).

Another study conducted in Botswana which aimed to assess the nurses' cardiopulmonary resuscitation knowledge and skills within three district hospitals. A non-probability, convenience sampling technique was used to select 154 nurses, founded that deficient CPR knowledge and skills. The pre-test knowledge average was 48% with a S.D $\pm$ 17.2. While a 26.1% was increased their knowledge in post-test score after 6^{th} months of pre-test. It concludes that the poor CPR knowledge and skills among registered nurses may impede the survival and management of cardiac arrest victims (Cox et al., 2018).

A narrative review study provides a focused overview of cardiac arrest in patients with suspected or confirmed Covid_19. It was a Journal pre-proof concluded that Covid_19 is highly communicable and poses significant risk to healthcare providers. Resuscitation should be started as soon as possible to help the patient. Also, the health care providers should have a clear process to manage and lead the resuscitation. In addition, healthcare providers must identify the underlying cause of the patient's cardiac arrest and determine the risk/benefit of aggressive interventions in these critically ill patients (Gottlieb et al., 2020).

Another study aimed to assess the knowledge and practices regarding revised CPR guideline among final year nursing students at PPG collage of nursing, in Coimbatore

with a study sample of 30 students were selected by purposive sampling technique. Founded that knowledge mean score of final year nursing students in pre-test was 15.9 with a S.D $\pm$ 14.17 and post- test was 27.1 with a S.D $\pm$ 8.29. The correlation between pre-test knowledge and knowledge on practice was +0.97. It concludes that a positive relation was found between the knowledge and practice score. It's also concluded that the level of knowledge regarding revised CPR guideline among nursing students was poor (Phil et al., 2016).

Another study assesses 34 senior nursing students from four nursing programs, all participants attended as team leader for a video recorded simulated (VSR) cardiac arrest event. The result of the study was 0.194 (2tailedsignificance =0.272) between written and practical courses throughout Spearman correlation coefficient. The study concluded that the ACLS written estimates was not a predictor of participant skills in managing conformed cardiac arrest event (Rodgers et al., 2014).

There was a multi-institutional survey especially for pediatric resuscitation practices during the Coronavirus disease 2019 pandemic, 130 institutions surveyed. Sixty-seven respondents (86%) implemented changes to inpatient emergency response systems. most of respondents are intubating earlier during cardiopulmonary resuscitation (56; 72%). It was varied concerning ventilation strategy during CPR without an advance airway in place, airway personnel and extracorporeal cardiopulmonary resuscitation (Morgan etal, .2020).

Another study talked about assessing the CPR knowledge and skills among healthcare providers at an urban tertiary referral hospital in Tanzania, this was a descriptive cross-sectional study of a random sample of 350 health care providers, from all 12 emergency clinical departments. The 233(67%) HCP who reported prior

experience performing CPR on an adult patient scored higher on testing than those without; 40% versus 26% respectively, but both groups had median scores, and conclude that the HCP has a poor knowledge despite having a CPR background (Kaihula etal,.2018).

There is a study investigated KAP of CPR among nurses conducted in Nigeria in 2020, founded that 74.9% of participants have a good knowledge toward CPR, 56.3% had a negative attitude and 65.2% had a good practice level toward CPR for the patient and concluded that all of nurses need to be highly qualified and has a positive attitude toward CPR (Michael etal,.2020).

2.5 Protocols for Dealing with CPR for Covid_19 Patients

In recent days, and after searching the websites, i found three different protocols for dealing with CPR for Covid_19 patients, so now i will review these protocols and discuss the difference between them at all for adults CPR only. Despite that this study will assess the nurses KAP toward CPR for Covid_19 patients according to the new AHA guidelines.

2.5.1 Firstly, I will start with the Europe Guideline for dealing with Covid_19 CPR cases, as it was discussed in a literature that aimed to summarize the guideline, so this guideline was provided on 24 April 2020 and will be subject to evolving knowledge and experience of Covid_19. There was a general recommendation for BLS in adults for Covid_19 patients as mentioned in the protocol guideline (Handley et al, 2020).

1. Identify if the patient were cardiac arrest or not and assess the patient responsiveness level.

2. When assessing breathing too avoid been infected, do not open the airway and don't place your face next to the patients' nose or mouth.
3. Call for help during CPR.
4. Rescuers should place a towel over the client's nose and mouth before performing CPR.
5. Team who responds to cardiac arrest patients (both in- and out-of-hospital) should be trained in the use of PPE.
6. Applying pads of the Defibrillator and delivering a shock from it.
7. Perform chest compressions, pausing chest compressions during ventilations to minimize the risk of aerosol.
8. Use a high-efficiency particulate air (HEPA) filter to minimize the risk of virus spread.
9. Use two hands to hold the mask and ensure a good seal for bag-mask ventilation.
10. After providing CPR, rescuers should wash their hands thoroughly with soap and water or disinfect.

For the European nurses, they should follow the below instructions according to their Protocol, so in-hospital, cardiac arrest identify as early as possible any patients with a Covid_19 like illness, who are at risk of acute deterioration or cardiac arrest focuses on firstly avoid CPR without appropriate PPE. Then call for help (Code Blue). After that check for signs of life/pulse. DO NOT listen for breaths by place your mouth or nose near to the patient's face. Switch the Defibrillator on, deliver a shock if the rhythm is shockable. If the patient remains in VF/pulseless VT. give up to two additional shocks (if indicated) while other healthcare workers are put their PPE on and then let them start chest compression and use of HEPA filter to prevent

infection during artificial respiration via bag valve mask. So, this is **the European hospital emergency protocol** for dealing with Covid_19 patients (Nolan etal.,2020).

2.5.2 The Medical Journal of Australia Guideline for Adults Covid_19CPR that was published 24th, April.2020 in New Zealand as follow (Craig etal.,2020). Same as AHA protocol for dealing with the Covid_19 patients who need CPR. The steps for dealing with cardiac arrest patient, who had Covid_19 according to the Australian Covid_19 CPR guideline, see figure 2:

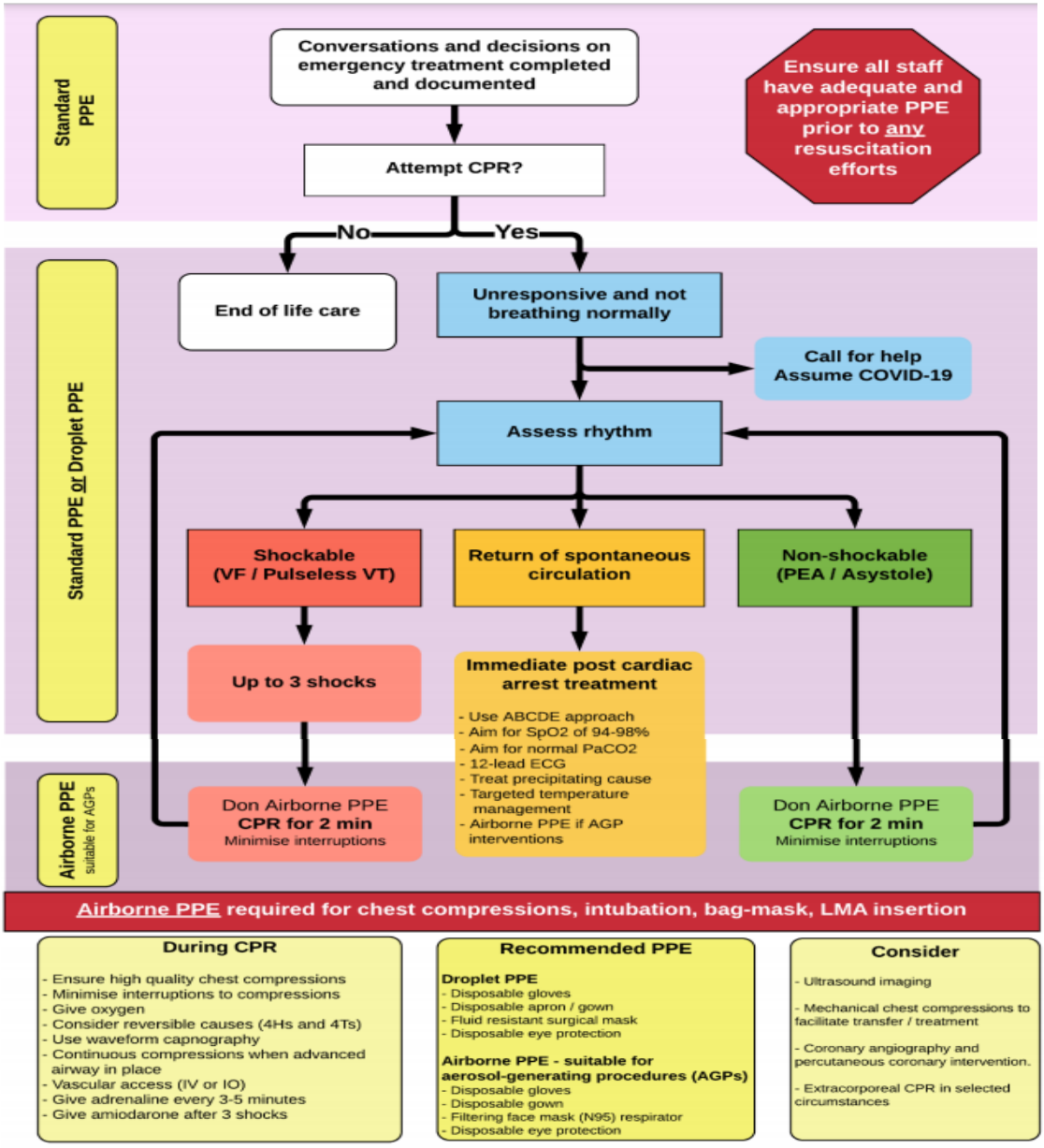


Figure 2: Newzeland Guideline for CPR

The Covid_19 goal of care according to the Australian Guideline.2020, see figure3:

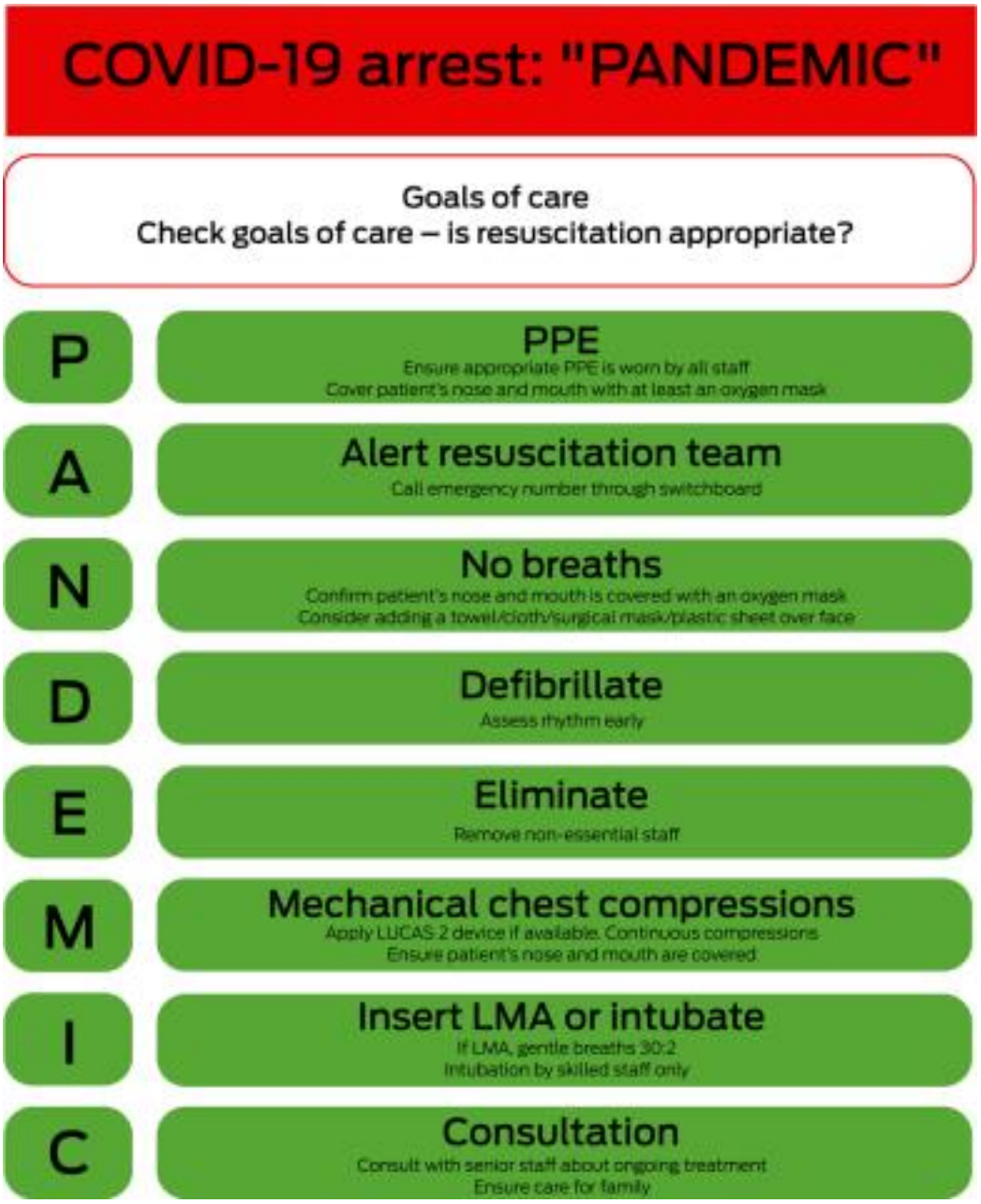
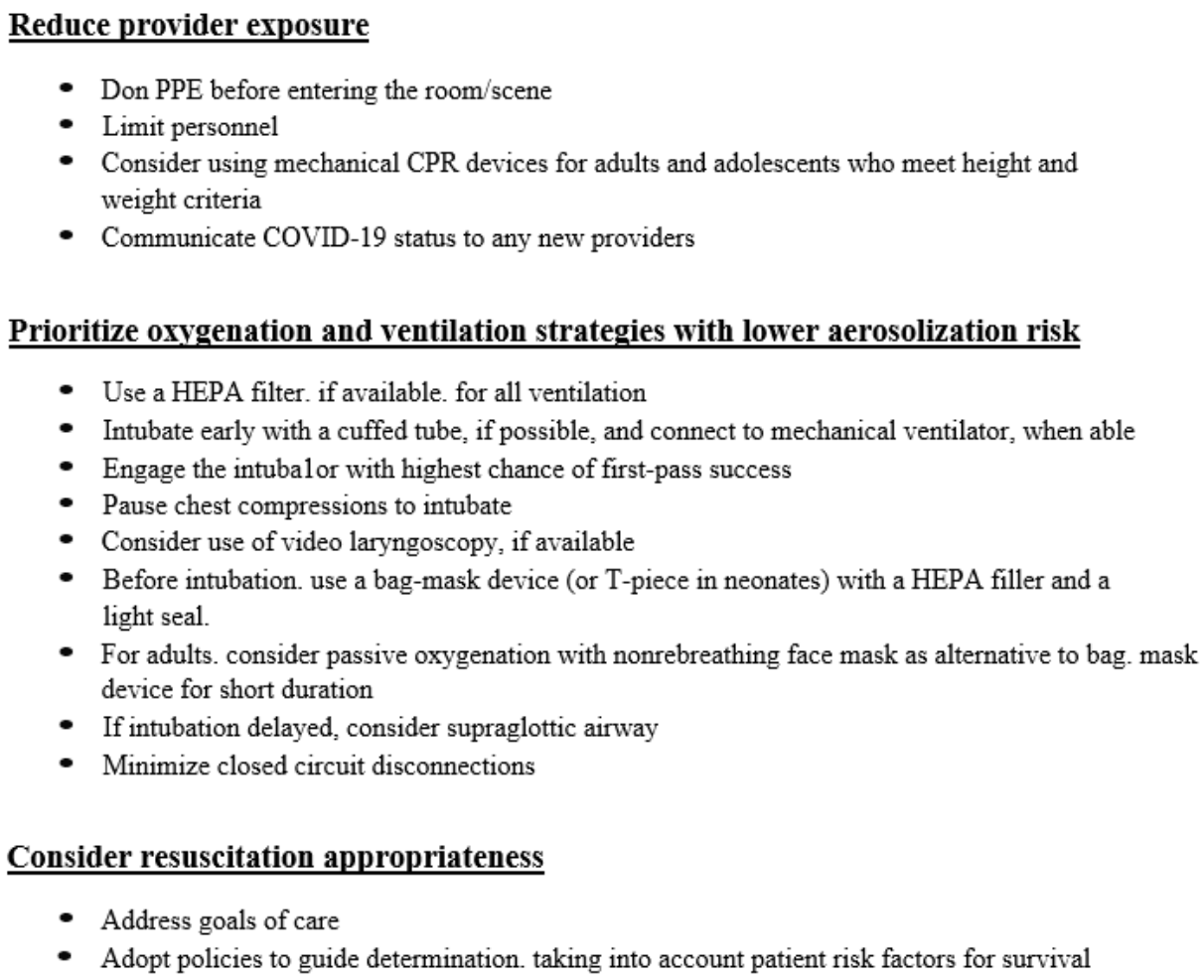


Figure 3: The guideline has a goal of care for resuscitation (Clinical Australasian emergency departments guideline).

2.5.3 Finally, I will now summarize the **American Heart Association (AHA) Guideline for Covid_19CPR,** Interim Guidance for Basic Resuscitation in Adult task forces of the American Heart Association as in figure 4 (Edelson etal.,2020).



Reduce provider exposure

- Don PPE before entering the room/scene
- Limit personnel
- Consider using mechanical CPR devices for adults and adolescents who meet height and weight criteria
- Communicate COVID-19 status to any new providers

Prioritize oxygenation and ventilation strategies with lower aerosolization risk

- Use a HEPA filter. if available. for all ventilation
- Intubate early with a cuffed tube, if possible, and connect to mechanical ventilator, when able
- Engage the intuba1or with highest chance of first-pass success
- Pause chest compressions to intubate
- Consider use of video laryngoscopy, if available
- Before intubation. use a bag-mask device (or T-piece in neonates) with a HEPA filler and a light seal.
- For adults. consider passive oxygenation with nonrebreathing face mask as alternative to bag. mask device for short duration
- If intubation delayed, consider supraglottic airway
- Minimize closed circuit disconnections

Consider resuscitation appropriateness

- Address goals of care
- Adopt policies to guide determination. taking into account patient risk factors for survival

Figure **4:** Summary of adjustments to cardiopulmonary resuscitation (CPR) for Covid_19 clients.

Now we will see the BLS for Covid_19 patients according AHA guidelines on figure 5 below:

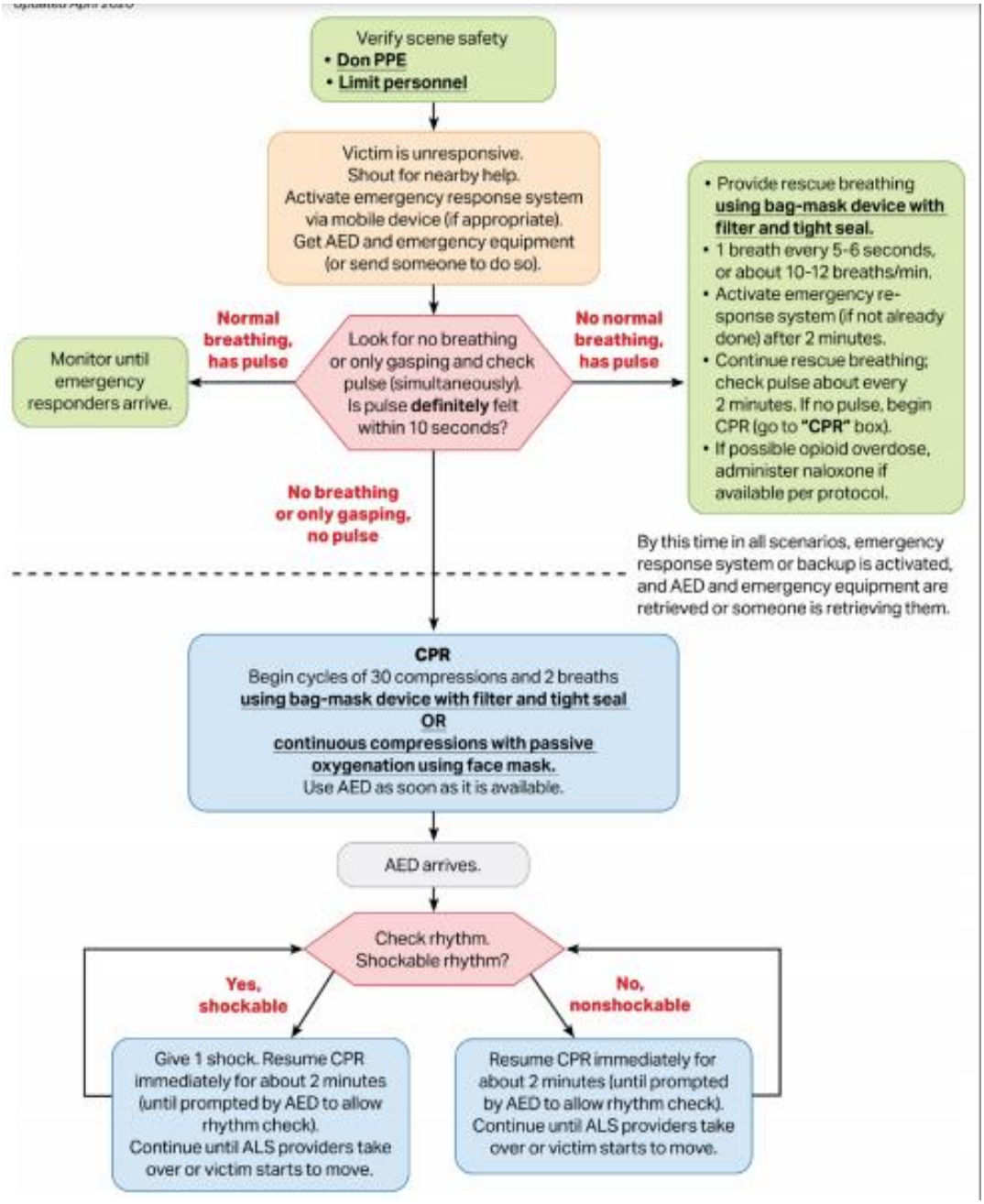


Figure 5: BLS healthcare provider adult cardiac arrest algorithm COVID_19. (Edelson etal.,2020)

Now we will see the ACLS for Covid_19 patients according AHA Covid_19 guidelines on figure 6 below:

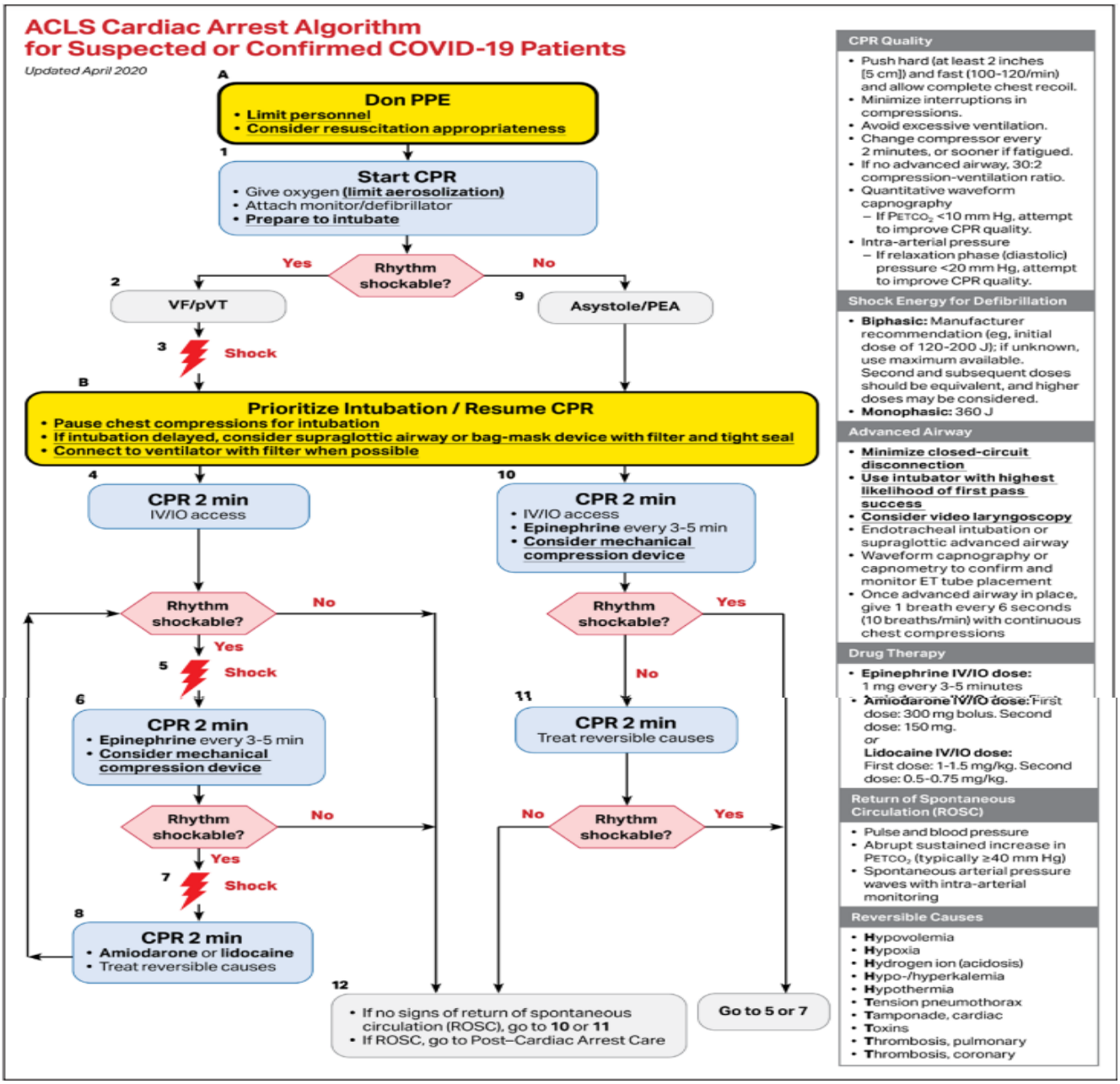


Figure 6: ACLS algorithm for Covid_19 clients. (Edelson et al.,2020)

2.5.5 Post Resuscitation Care:

If patient entered in (ROSC) phase, then time should be taken to assess need for and potential benefit of intubation in the context of the individual's goals of care. If you want to connect the patient on ventilator, clamp the endotracheal tube before disconnecting it from the patient. Any breaches of PPE policy should be documented and reported according to protocols. (Criag etal.,2020).

3. Chapter three: Methodology

3.1 Introduction

This chapter draws the methodology for the study nurses' knowledge, attitudes, and practices toward CPR for Covid_19 patients. Data was collected by questionnaire. The study design was a quantitative, cross-sectional, non-observational study assessed CPR for Covid_19 patients between nurses at Palestinian Governmental hospitals in West Bank. Moreover, this chapter defined the study (population, setting, and design), sampling criteria, data collection process, and the plan for statistical analysis and results.

3.2 Research Design

The study used quantitative, cross sectional method, descriptive study. The research design helps the researcher in the selection of study sample, testing the research hypothesis, procedure of data collection and types of statistical analysis to be used to interpret the data. This method is used to make inferences about possible relationships in the study, or to gather primary data to support further researches.

3.3 Study Setting

The study is conducted at all Palestinian governmental hospitals, as in the next table 3-1.

Table 3-1: Study settings and their sample distribution.

Hospital	Frequency
Palestinian Medical Complex (PMC)/ Ramallah	22
Rafidiah Hospital/ Nablus	18
Al-Watani Hospital/ Nablus	13
Dr Khalil Suleiman Governmental Hospital/ Jenin	16
Dr Darwish Nazzal Governmental Hospital/ Qalqilya	10
Hebron Hospital (Alia)/ Hebron	28
Beit Jala Governmental Hospital (Al-Husain)/ Bait Lahm	15
Tubas Turkish Hospital/ Tubas	11
Mohammad Ali Almohtaseb/ Hebron	12
Thabit Thabit Governmental Hospital/ Tulkarm	25
Yatta Governmental Hospital/ Yatta – Hebron	14
Yasser Arafat Governmental Hospital/ Salfit	10
Domeh Hospital /Al Dahryia/Hebron	7
Jericho hospital	9
Total	210 nurses

3.4 Study Population

Study population includes all 230 nurses who are distributed in all Emergency departments in all Palestinian governmental hospitals include bachelorette nurse, diploma, MSN and their job title.

3.5 Study Sample:

All nurses who work in Emergency Department were targeted in the study. The study sample distributed in Palestinian governmental hospitals in West Bank area. See table (3-1) in the previous page.

3.6 Inclusion Criteria: All nurses who work in emergency department.

3.7 Exclusion Criteria: I exclude the nurses' who had no experience in emergency department, the private hospitals nurses, and other governmental departments nurses.

3.8 Instrument of the Study

By using a self-administered questionnaire, data were being collected after obtaining the approval of ministry of health and Arab American University ethical boards. The questionnaire took about 8-10 minutes to be filled out. Also, the questionnaire was written and distributed for the nurses with an English language.

The questionnaire consisted of 44 items. Some of these questions were collected from different previous article like COIMBATORE study (Phill et al.2016). Other questions were developed with my advisor; it was designed by the researcher according to the new AHA Covid_19CPR guideline. All questions were reviewed by academic experts in emergency care (four experts).

The final questionnaire consisted of four parts:

- Part 1. Social demographics section: There were 13 questions about general information's as: age, marital status, gender, educational level, current work position, employment status, years of experience in ED experience, continuous learning committee, previous CPR training sessions and the AHA Certification for CPR.
- Part 2. This section contains 14 questions used to assess the knowledge of nurses toward CPR for Covid_19 patients. The participants were asked to answer (√) at their squire of choice according to what suits them. The answers options are Yes, No or I don't know.

  The researcher differentiates between correct answer and wrong one by using the AHA Covid_19guidelines with the study adviser.

- Part 3. Attitudes of nurses toward CPR for Covid_19 patients. There are five questions that examined the participants' attitude. The answers varied from strongly disagree, disagree, neutral, agree, and strongly agree.

- Part 4. Practices of nurses toward CPR for Covid_19 patients. There were ten questions. The nurses were asked to use (√) at their place. The answers Yes, No or I don't know.

The researcher differentiates between correct answer and wrong one by using the AHA Covid_19 guidelines with the study adviser.

The sum score of each outcome was assessed based on Bloom's cut off point (Bloom, 1956). Based on the sum scores, level of knowledge was classified into low level knowledge (less than 60%), moderate level knowledge (60-80%) and high level knowledge (80-100%). Meanwhile, the scores were classified into positive attitude (80- 100%), neutral attitude (60%-80%) and negative attitude (less than 60%). Subsequently, level of practice was classified into poor level (less than 60%), fair level (60-80%) and good level (80- 100%) (Bloom.1956).

3.9 Data Collection Process:

The data were collected from all governmental hospitals, especially from the nurses who work in emergency department. Collection starts from 1st march 2021 to the 15th may at the same year.

The data were collected from 14th governmental hospitals, researcher had a senior nurse in each hospital who took the responsibility of filling the questioner from all nurses who work in emergency department, researcher was met all seniors and explain the process of data collection, questioner variables and the aim of the study. all emergency nurses were filled the questioner in the selected time, without missing anyone.

Researcher informed the seniors to call him when they faced any obstacle in the data collection. After that, the researcher met all seniors and collect the data from them for analysis with make sure that the numbers of filled data were identical to the number of nurses on the nurses' weekly work schedule.

3.10 Validity and Reliability

The questionnaire was sent to four experts in emergency and medicine to assess the validity of the questionnaire. Modification was done according to comments. Also, internal consistency reliability using Cronbach's alpha coefficient was 0.87 for the knowledge part, 0.79 for the attitude part, and 0.83 for the practice part (Bloom. 1956)

3.11 Pilot Study

The author conducted a pilot study in emergency department governmental hospital on a convenience sample of 20 nurses before starting the actual study. The pilot study sample were distributed randomly from governmental hospital especially the nurses who work in emergency department. The pilot study was intended to identify expected problems before the data collection procedure, and the appropriateness of the items in the questionnaire. This step helped me to evaluate and ensure the clarity of the questionnaire's words form the participants' viewpoint. Their comments shown that the items were suitable, clear, comprehensive, not confusing and were easy to complete.

3.12 Ethical Consideration

Permission was obtained from the nursing faculty in the AAUP and Palestinian Ministry of Health (MOH) to conduct the study in emergency departments of Palestinian governmental hospitals. Then, the researcher obtained a verbal approval from the nursing director of each hospital. All participants' approval obtained verbally before the data collection process started. The participants informed that they have the right to participate or to withdraw from the study and to not answer any sensitive question. Names are not required during participation in the study, the information obtained in this study is used only for research purposes and nobody can reach the information of any participant.

4. Chapter Four: Results

4.1 Introduction

This chapter deals with the data collected for analysis. The statistical method allowed the investigator to deduce, analyze, coordinate, measure, evaluate and convey the numerical information. The aim of data analysis is to provide answers to study's questions. The data analysis strategy comes directly from the question, the design and the data collection process and the level of measurement of the data. This chapter edits, tabulates, analyzes and interprets the collected data.

This chapter expresses the findings concerning to assess the governmental emergency nurses' knowledge, attitude and perception of practice toward Cardiopulmonary resuscitation for Covid_19 patients in Palestinian governmental hospitals in West Bank.

Statistical analyses were directed to explore three research questions:

1. What is the level of emergency department nurses' knowledge toward cardiopulmonary resuscitation of Covid_19 patients in Palestinian Governmental hospitals at West Bank?
2. What is the level of emergency department nurses' attitude toward cardiopulmonary resuscitation of Covid_19 patients in Palestinian Governmental hospitals at West Bank?
3. What is the perception of practice level of emergency department nurses toward cardiopulmonary resuscitation of Covid_19 patients in Palestinian Governmental hospitals at West Bank?

4. What are the predictors of nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients in Palestinian Governmental hospitals at West Bank?
5. What is the level of the total KAP for Palestinian emergency nurses toward CPR for Covid_19 patients?

4.2 Participants' Characteristics

The findings revealed that 210 nurses were completed the questionnaire with a response rate of 100%. The majority of nurses' age (34.3%) were 25 years and less. Approximately, two thirds of the participants (68.1%) were males. With regard to marital status, more than half of them (53.3%) were married and (55.27%) had a Bachelor degree in nursing. Table 4-1 shows these demographic characteristics of the nurses.

Table 4-1: Demographic characteristics of the participants (N=210)

Characteristics		N	(%)
Age	25 years and less	72	34.3
	26-30 years	63	30.0
	31-35 years	39	18.6
	36-40 years	29	13.8
	41-45	4	1.9
	More than 45 years	3	1.4

Gender	Male	143	68.1
	Female	67	31.9
Marital status	Single	94	44.8
	Married	112	53.3
	Other	4	1.9
Level of education	Diploma	67	31.9
	Bachelor	116	55.2
	High diploma	2	1.0
	Master	19	9.0
	Other	6	2.9

The hospital nurse's percentage per total study population were high by nurses in Hebron Hospital (Alia)/ Hebron (13.3%), Thabit Thabit Governmental Hospital/ Tulkarm (11.9%), and Palestinian Medical Complex (PMC)/ Ramallah (10.5%), as seen in table 4-2.

Table 4- 2: Percentage of nurse's response in the targeted hospitals (N=210)

Hospital	**Frequency**	**%**
Palestinian Medical Complex (PMC)/ Ramallah	22	10.5
Rafidiah Hospital/ Nablus	18	8.6
Al-Watani Hospital/ Nablus	13	6.2
Dr Khalil Suleiman Governmental Hospital/ Jenin	16	7.6
Dr Darwish Nazzal Governmental Hospital/ Qalqilya	10	4.8
Hebron Hospital (Alia)/ Hebron	28	13.3
Beit Jala Governmental Hospital (Al-Husain)/ Bait Lahm	15	7.1
Tubas Turkish Hospital/ Tubas	11	5.2
Mohammad Ali Almohtaseb/ Hebron	12	5.7
Thabit Thabit Governmental Hospital/ Tulkarm	25	11.9
Yatta Governmental Hospital/ Yatta – Hebron	14	6.7
Yasser Arafat Governmental Hospital/ Salfit	10	4.8
Domeh Hospital /Al Dahryia/Hebron	7	3.3
Jericho hospital	9	4.3
Total	210	100.0

Also, the analysis revealed that more than half of the nurses (56.7%) were staff nurses and most of them (82.4%) were full time. In addition, the participants average of years in nursing profession was 6.4±SD=5.8 and the average of years in ED was 3.4±SD=3.2, as seen in Table 4-3.

Table 4-3: Work related characteristics of the participants (N=210)

Characteristics		M (SD)	N (%)
Job position	Practical nurse		66 (31.4)
	Staff nurse		119 (56.7)
	Assistant head nurse		14 (6.7)
	Head nurse		11 (5.2)
Employment status	Full time		173 (82.4)
	Part time (Temporary contract)		31 (14.8)
	Other		6 (2.9)
Number of years in Nursing profession		6.374(5.7613)	
Number of year in ED		3.446 (3.2148)	

The analysis revealed that the majority of the nurses 76.7% reported that they have continuous learning committees in their hospitals. Most of the nurses 91.0% reported that they participated in CPR Training sessions but 33.3% of them indicated that their Last Training session was before more than 1 year. Also, 80.0% of them reported that they have a certified certification from AHA and 16.2% had only BLS & ACLS, as seen in Table 4-4.

Table 4-4: Distribution of the participants according cardiopulmonary resuscitation training (N=210)

Characteristics		n	(%)
Is there a Continuous Learning Committee in your Hospital	Yes	161	76.7
	No	49	23.3
Have you ever participated in CPR Training sessions	Yes	191	91.0
	No	19	9.0
Last Training session before	less than 1 month	36	17.1
	1-3 months	58	27.6
	4-8 months	24	11.4
	9-12 months	22	10.5
	more than 1 year	70	33.3
Did you Have a	Yes	168	80.0

certified certification From AHA	No	42	20.0
Certifications	BLS	63	30.0
	BLS & ACLS & CPR & AED	16	7.6
	ACLS	5	2.4
	PALS	4	1.9
	CPR & AED	5	2.4
	BLS & ACLS	34	16.2
	BLS & ACLS & PALS	12	5.7
	BLS & ACLS & PALS & CPR & AED	15	7.1
	BLS & CPR & AED	13	6.2
	BLS & PALS & CPR & AED	1	.5

4.3 Testing Research Questions

4.3.1 Research question 1: What is the level of emergency department nurses' knowledge toward cardiopulmonary resuscitation of Covid_19 patients in Palestinian Governmental hospitals at West Bank?

The analysis revealed that 42.4% of nurses' knowledge levels toward cardiopulmonary resuscitation of Covid_19 patients were moderate level and with less proportion 36.2% were high level knowledge, as seen in table 4-5.

Table 4- 5: Nurses' knowledge level on cardiopulmonary resuscitation of Covid_19 patients (N=210)

Nurses' knowledge Level	Count	%
Low level knowledge	45	21.4
Moderate level knowledge	89	42.4
High level knowledge	76	36.2

4.3.2 Research question 2: What is the level of emergency department nurses' attitude toward cardiopulmonary resuscitation of Covid_19 patients in Palestinian Governmental hospitals at West Bank?

The analysis revealed that 48.1% of the nurses' attitude levels toward cardiopulmonary resuscitation of Covid_19 patients were neutral level and with less proportion 37.1% were positive attitude level, as seen in table 4-6.

Table 4-6: Nurses' attitude level toward cardiopulmonary resuscitation of Covid_19 patients (N=210)

Nurses' Attitude level	Count	%
Negative attitude	31	14.8
Neutral attitude	101	48.1
Positive attitude	78	37.1

4.3.3 Research question 3: What is the perception of practice level of emergency department nurses toward cardiopulmonary resuscitation of Covid_19 patients in Palestinian Governmental hospitals at West Bank?

The analysis revealed that 56.7% of the nurses' perception levels of practice toward cardiopulmonary resuscitation of Covid_19 patients were good level and 26.2% were fair level, as seen in table 4-7.

Table 4-7: Perception of Nurses' practice level toward cardiopulmonary resuscitation of Covid_19 patients (N=210)

Perception of Nurses' practice level	Count	%
Poor level practice	36	17.1
Fair level practice	55	26.2
Good level practice	119	56.7

4.3.4 Research question 4: What are the predictors of nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients in Palestinian Governmental hospitals at West Bank?

To find out if there is a difference in nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients and demographic characteristics, ANOVA one way was performed. The analysis revealed that there was only significant relationship between nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients and gender ($p< 0.05$). Nurses' males illustrated high mean of nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19, as seen in table 4-8.

Table 4-8: Relationship between nurses' perception of practice toward CPR of Covid_19 patients and demographic characteristics (N=210)

Demographic characteristics		**N**	**M**	**SD**	**F**	**P. value**
Age	25 years and less	72	7.6250	2.61328	1.976	.084
	26-30 years	63	8.9048	2.08462		
	31-35 years	39	8.5641	2.47933		
	36-40 years	29	8.5172	2.39971		
	41-45	4	8.0000	5.35413		
	More than 45 years	3	8.0000	2.64575		
Gender	Male	143	8.6084	2.26123	6.136	.014

	Female	67	7.7015	2.87631		
Marital status	Single	94	8.1915	2.74460	1.449	.237
	Married	112	8.4911	2.27400		
	Other	4	6.5000	2.38048		
Educational level	Diploma nurse	67	8.0000	2.51058	1.713	.148
	Bachelor nurse	116	8.5086	2.58926		
	High diploma	2	5.5000	2.12132		
	Master	19	8.9474	1.71509		
	Other	6	7.1667	2.13698		

Also, the analysis revealed that there was only significant relationship between nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients and employment status ($p< 0.05$). Full time nurses illustrated high mean of nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients, as seen in table 4-9**.**

Table 4-9: Relationship between nurses' perception of practice toward CPR of Covid_19 patients and work-related characteristics (N=210)

		N	M	SD	Statistical test F	P. value
Job position	Practical nurse	66	8.0606	2.47373	1.446	.231
	Staff nurse	119	8.5630	2.40634		
	Assistant head nurse	14	7.2857	2.84006		
	Head nurse	11	11.7273	4.17351		
Employment status	Full time	173	8.6879	2.33171	11.760	.000
	Part time	31	6.6129	2.75291		
	Other	6	6.5000	1.64317		
					Pearson Correlation	
Number of years in Nursing profession					.106	.124
Number of years in ED					.071	.308

In addition, the analysis revealed that there was only significant relationship between nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients and participation in CPR Training sessions ($p< 0.05$). The nurses who participated in CPR training sessions illustrated high mean of nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients, as seen in table 4-10**.**

Table 4-10: Relationship between nurses' perception of practice toward CPR of Covid_19 patients and cardiopulmonary resuscitation training (N=210)

		N	**M**	**SD**	**F**	**P value**
Is there a Continuous Learning Committee in your Hospital	Yes	161	8.4720	2.38501	2.597	.109
	No	49	7.8163	2.82602		
Have you ever participated in CPR Training sessions	Yes	191	8.5026	2.42764	11.947	.001
	No	19	6.4737	2.56836		
Last Training session before	Less than 1 month	36	7.6389	2.56518	1.138	.340
	1-3 months	58	8.3793	2.36812		
	4-8 months	24	9.0000	1.81779		
	9-12 months	22	8.4545	2.10955		
	More than 1 year	70	8.3429	2.85335		
Did you Have a certified certification From AHA	Yes	168	8.4107	2.44295	1.127	.290
	No	42	7.9524	2.73150		

The fourth research question was to determine whether demographic, work related, and training characteristics predicted nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients. All assumptions were met for multiple regressions. Results from regression analyzes found that gender accounted for 2.9% of the nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients (Table 4-11). (Model 1) (Table 4-11). When both gender and employment status had included in the model (Model 2), R^2 has been expanded by another 6.9%, making the overall variance reach 9.8%. Also, when gender, employment status, and participation in CPR Training sessions have been included in the model (Model 3), R^2 has been expanded by another 2.8%, making the overall variance reach 12.6%.

Only employment status and participation in CPR Training sessions were significantly associated with nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients. Gender didn't have a significant effect on nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients when i put it with employment status and participation in CPR Training sessions. Employment status showed significant semi partial correlations of 0.243 ($p < 0.05$) and participation in CPR Training sessions 0.173 ($p < 0.05$) with nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients Based on the squared semi partial correlations, the amount of unique variance in clinical decision making was explained by nursing informatics competency (12.6%), as seen in table 4-11.

Table 4-11: Predictors for nurses' perception of practice toward CPR of Covid_19 patients (N=210)

Model	**Variable**	B	**SE**	**β**	**t**	**p. value**	**Confidence Interval**
1	Gender	-.907	.366	-.169	-2.477	.014	-1.629- -.185
2	Gender	-.411	.375	-.077	-1.095	.275	-1.150- 0.329
	Employment status	-1.482	.373	-.278	-3.974	.000	-2.217- -0.747
3	Gender	-.377	.370	-.070	-1.017	.310	-1.107- 0.353
	Employment status	-1.294	.375	-.243	-3.451	.001	-2.033- -0.554
	Have you ever participated in CPR Training sessions	-1.508	.581	-.173	-2.594	.010	-2.653 - -0.362

Dependent Variable: nurses' perception of practice toward CPR of Covid_19 patients

Note. Model 1. $R^2 = 0.029$, adjusted $R^2 = 0.024$, F-statistic = 6.136, df = 1

Model 2. $R^2 = 0.098$, adjusted $R^2 = 0.089$, F-statistic = 15.793, df = 2

Model 3. $R^2 = 0$ .126, adjusted $R^2 = 0.113$, F-statistic = 6.730, df = 3

5. Chapter five: Discussion, Conclusion, Recommendations and Limitations

5.1 Introduction for Discussion:

This chapter discusses the results that are produced and connect them with the research questions of this study. According to my study there were 210 participants filled the self-administered questionnaire, with a response rate of 100 %, in order to assess nurse's knowledge, attitudes, and perception of practices (KAP) regarding of CPR for Covid_19 clients in Palestinian governmental hospitals. So, I divided the discussion as the following:

The nurse's knowledge, attitudes, and perception of practices (KAP) regarding of CPR for Covid_19 clients in Palestinian governmental hospitals was assessed in this study. The study showed that the 21.4% of emergency nurses have a low level of knowledge, 42.4% were moderate level, and 36.2% have a high level. The results of this study agree with previous a descriptive cross-sectional study of a random sample of 350 health care providers. The study involved 12 emergency clinical departments conducted at an urban tertiary referral hospital in Tanzania. The study concluded that the level of CPR knowledge and skills was poor.

Also, there is another study conducted on assessment of nurse's knowledge in Mbarara hospital in-Uganda concluded that there was a significance relation between CPR pretest and posttest knowledge improvement, so it focuses only on

increasing the participants' knowledge and skills. the mean of knowledge was 59.9 and the mean of skills 159% for skill assessment (Basco et al., 2018).

The results of this study agree with previous study showed that the student had a good knowledge about the importance of CPR in clinical practice with a mean 64.6%, this study was aimed to assess the CPR knowledge among nursing students in Istanbul. (Vural., etall.2017).

For the attitude dimension in this study, the analysis of the study showed that 14.8% of study participants have a negative attitude toward CPR for Covid 19 clients, were as 48.1% were have a neutral attitude, and 37.1% of Emergency nurses have a positive attitude toward CPR for Covid_19 patients in Palestinian governmental hospitals in West Bank.

According to study results, for the perception of practice dimension in this study, the analysis of the study showed that 17.1% of study participants have a poor level of practice regarding CPR for Covid_19clients, were as 26.2% were have a fair level of practice, and 56.7% of Emergency nurses have a good level of practice toward CPR for Covid_19 patients in Palestinian governmental hospitals in West Bank.

The results of this study agree with previous study assesses the Knowledge and attitude towards BLS among Health Care Professionals Working in Emergency department, showed that all participants have a positive attitude with

a p value less than 0.005, so the attitude and knowledge considered in moderate for the participants. (shaher et al. 2019).

ANOVA one-way test was performed in order to find if there is a difference in nurse's perception of practice toward CPR for Covid_19clients and demographic characteristics found that there were only significant difference between nurse's perception of practice toward cardiopulmonary resuscitation of Covid_19 patients and gender ($p< 0.05$). Nurses' males illustrated high mean of nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19, as seen in table (4-8) in results chapter.

The results of this study agreed with earlier study that aimed to assess the knowledge and practices regarding revised CPR guideline among final year nursing students at PPG collage of nursing, in Coimbatore. This study sample consist of 30 students were selected by purposive sampling technique, that founded that Conclude that A positive correlation was found between the knowledge and practice. This shows that the improvement in knowledge about the revised CPR guideline helps in developing favorable practice towards the CPR techniques among final year students. So the level of knowledge regarding revised CPR guideline among nursing students was poor, this clearly indicates the need for appropriate education intervention for enhancing nursing knowledge about revised CPR guideline (Phil et al., 2016).

Also, the analysis revealed that there was a significant difference between nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19

patients and employment status ($p < 0.05$). Full time nurses illustrated high mean of nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients, as seen in table (4-9) in results chapter.

In addition, the analysis revealed that there was only significant difference between nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients and participation in CPR Training sessions ($p < 0.05$). The nurses who participated in CPR training sessions illustrated high mean of nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients, as seen in table (4-10) in results chapter.

My study shows that 56.7% of health care workers had a good level of practice this result agreed with a previous study was conducted to assess knowledge, attitude, practice and factors associated with CPR among clinical year medical students in Jimma University Clinical year medical students had a better knowledge, attitude and practice score towards CP but were not sufficient. Therefore, our nurses or health care workers should improve their knowledge, attitudes, and practices regarding CPR for Covid_19 patients.

A study was found that the correlation between pre-test and posttest on practice was +0.97. It concludes that a positive correlation was found between the knowledge and practice score both in (post, pre) test. It's also concluded that the level of knowledge regarding revised CPR guideline among nursing students was poor (Phil et al., 2016).

As a summery, there is a significant difference between nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients and gender ($p< 0.05$). Nurses' males illustrated high mean of nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19, as seen in table 4-8. Also, the analysis revealed that there was only significant difference between nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients and employment status ($p< 0.05$). Full time nurses illustrated high mean of nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients, as seen in table 4-9. The analysis revealed that there was only significant difference between nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients and participation in CPR Training sessions ($p< 0.05$). The nurses who participated in CPR training sessions illustrated high mean of nurses' perception of practice toward cardiopulmonary resuscitation of Covid_19 patients, as seen in table 4-10. As a result of the study analysis consequence, we found there is a need for Enhance the level of nurses KAP about COVID_19 patient's CPR.

5.2 Conclusion:

As a summary of the study, there was a 42% of Palestinian governmental emergency nurses have a moderate level of knowledge toward CPR for Covid_19, for the attitude dimension, there was a 48,1% of nursing has a neutral attitude toward CPR for the Covid_19 patients, and 56% of study participants had a good level of practice toward CPR for Covid_19clients.

The previous analysis revealed that there is a significant relation between gender and perception of practice ($p<0.05$) when I took the gender and perception alone

without any other variable. But when I took the gender with employment status and previously trained for CPR with the perception of practice, I found that the gender has no significant relation with the perception of practice ($p>0.05$). Only employment status and previously trained for CPR had a significant relation with perception of practice with a p value <0.05.

5.3 Recommendations

After discussing the result of this study in the previous chapter, it is recommended to improve the nursing knowledge, attitude and perception of practice toward CPR for Covid_19 patients throughout three main levels.

5.3.1 Operational level in hospital:

1. Enhance the continuing education committee and empower their roles in all Palestinian governmental hospitals.
2. Follow a policies and measures for CPR to improve nursing and staff team assurance of AHA protocols implementation.
3. Establish a monitoring system on CPR outcome to improve the patient safety outcome.
4. Establish a protocol all nurses who will be accepted to work in emergency department must have at least basic life support.

5.3.2 Educational level in universities:

1. Enhance Palestinian university to give BLS and ACLS to all nurse's student who will graduate from it.
2. Involve nurses in an international health care institution to increase their KAP toward CPR.

3. Inspire the researchers to conduct studies to enhance the KAP level that integrate with nurses toward CPR.
4. Encourage the Palestinian ministering of health to give all nurses a training session about CPR to increase their KAP level toward CPR.

5.3.3 My viewpoint on CPR process:

1. Conducting BLS courses in a regular manner for the HCT (health care team).
2. Re-assessing the HCT who took BLS after a time to ensure that they got it in a good manner.
3. Further studies are recommended to assess KAP again and to assess the need of continuous workshops.
4. Further studies to other health care or governmental departments it includes ICU, CCU and general care.
5. Applied CPR guidelines and put a policy to follow when deal with CPR cases.
6. CPR among nurses should be assessed and rectified annually.

5.4 Limitations:

I faced many limitations during collection of my study questionnaires and its analysis, these limitations as follow:

1. The study was limited only emergency nurses who work in Palestine governmental hospital.
2. There wasn't a valid questioner to assets the nurses KAP toward CPR for Covid_19all around the world.
3. Lack of literature review that talk about CPR for Covid_19moreover it was the first research assesses the nurses KAP toward CPR for Covid_19 patients.

4. Lack of time due to health care situation all around Palestine during Covid_19pandemic, so it makes the data collection more difficult.
5. The study did not include all government hospitals in Palestine, especially Gaza, due to the Israeli occupation.
6. High costs of transportation, collecting data process and its analysis.

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7. Appendix

In this chapter will include all study approval papers in addition to the study self-administered questioner.

7.1Governmental Hospital Approval

Arab American University
Faculty of Graduate Studies

الجامعة العربية الأمريكية
كلية الدراسات العليا

2021-4-28

حضرة د. عبد الله القواسمي المحترم

رئيس وحدة التعليم الصحي والبحث العلمي

تسهيل مهمة بحثية

تحية طيبة وبعد،

تهديكم كلية الدراسات العليا في الجامعة العربية الامريكية اطيب التحيات، وبالإشارة الى الموضوع أعلاه، تشهد كلية الدراسات العليا في الجامعة أن الطالب **خليل ابراهيم خليل الشوامرة** والذي يحمل الرقم الجامعي 201912832 وهو طالب ماجستير في الجامعة العربية الامريكية تخصص تمريض الطوارئ، ويعمل على رسالة بعنوان **" تحديد مدى قدرة وكفاءة جميع ممرضي طوارئ المستشفيات الحكومية في الضفة الغربية تجاه حالات الانعاش القلبي والرئوي لمرضى كورونا-١٩"**. نأمل من حضرتكم الايعاز لمن يلزم لمساعدته في الحصول على المعلومات اللازمة للدراسة، علما" ان المعلومات ستستخدم لغاية البحث فقط وسيتم التعامل معها بغاية السرية، وقد أعطيت هذه الرسالة بناء" على طلبه.

وتفضلوا بقبول فائق الاحترام

د. أشرف الميمي

عميد كلية الدراسات العليا

كلية الدراسات العليا
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7.2Study Self-Administered Questioner:

Emergency Nursing Master Program

Dear Nursing colleagues,

The researcher is preparing a study to explore and evaluate the extent of knowledge, attitude and practice among emergency department nurses about CPR for Covid_19 patients in Palestinian government hospitals in the West Bank.

This questionnaire was prepared as part of a study to obtain a master's degree in emergency nursing, and you have been selected to be part of the study sample.

Therefore, we put in your hands this questionnaire, hoping to provide assistance by answering the paragraphs of the questionnaire accurately and objectively because it has a great impact on obtaining accurate results. ***Note*** *that everything that is contained in your answers will be respected, and will be treated with complete confidentiality, and will only be used for scientific research purposes only. Therefore, there is no need to write the name or any information indicating your honorable person.*

You will need approximately 11 minutes to complete this questionnaire. Please read the questions and choose what suits you, using an (X) or (√) in the appropriate place.

The research team is ready to provide you with the results of this study if requested

With many thanks for your cooperation

For more inquiries, you can call: 0562000520

Or write an E-Mail to Kshawamri@gmail.com

Researcher: Khalil Ibrahim Al-Shawamri

The supervision Dr. Ahmed Al-Batran

Part One : Demographic Data :

Please read the questions and mark your answer with an (X) or (√) in the appropriate place:

Age in Years : ☐ *20-25* ☐ *26-30* ☐ *31-35* ☐ *36-40*

☐ *41-45* ☐ *more than 46*

1. *Gender :* ☐ *Male* ☐ *Female*
2. *Marital status :* ☐ *Single* ☐ *Married* ☐ *other*
3. *Educational Level :* ☐ *Practical Nurse* ☐ *Bachelorette Nurse* ☐ *Specialized high Diploma* ☐ *Master* ☐ *PHD* ☐ *other*
4. *Your Position :* ☐ *Practical Nurse* ☐ *Registered Nurse* ☐ *Assistance head Nurse* ☐ *Head Nurse*
5. *Employment status :* ☐ *Full Time* ☐ *Part Time* ☐ *other*
6. *Number of years in Nursing :……. Year .*
7. *Number of years in Emergency Department : ……. Year.*
8. *Is there a Continuous Learning Committee in your Hospital* ☐ *Yes* ☐ *No*
9. *Have you ever participated in CPR Training sessions :* ☐ *Yes* ☐ *No*
10. *Last Training session before :* ☐ *less than one month* ☐ *1-3 months* ☐ *3-9months* ☐ *9-12months* ☐ *more than one year*
11. *Did you Have a certified certification From AHA :* ☐ *Yes* ☐ *No*
12. *If you answered Yes in Question 12 , Please specify the CPR Certifications you have :* ☐ *BLS* ☐ *ACLS* ☐ *PALS* ☐ *CPR & AED*

Others :……,……

Part Two: The phrases in the following table aim to check your knowledge of CPR for Corona patients, so please answer the following questions using the (X) or (/) in the place that suits you:

Q. Number	Knowledge Questions	Yes	No	I don't know
13.	**Person should be kept on a hold surface (CPR bored) for effective CPR.**			
14.	**We have to make sure that weather the person is breathing or no before initiating CPR.**			
15.	**Cardiopulmonary resuscitation is an emergency procedure to restore airway, breathing and circulation for the victim.**			
16.	**The rescuer has to give 100 chest compression per minute.**			
17.	**To apply the maximum pressure the rescue, place the arms at right of the patient sternum.**			
18.	**You should always wear a mask and PPE before CPR*.**			
19.	**Face shields are more effective than face masks in Resuscitation.**			
20.	**Airway should be cleaned before artificial respiration initiated.**			

21.	**The normal peacemaker of the heart is SA node.**			
22.	**Early CPR and on time Defibrillation can increase the chance of survival for the victims.**			
23.	**We should ventilate the cardiac arrested patient 10-12 breath / min.**			
24.	**If the patient present with a pulseless Ventricular tachycardia, we should give a synchronized cardioversion.**			
25.	**When we deliver a cardioversion (DC shock) to a covid patient, we should always analyze the rhythm after shock being delivered.**			
26.	**To evaluate the patient consciousness, we use AVPU scale.**			
27.	**We give doubled dose of adrenaline in endotracheal tube (2mg diluted in 10ml saline)**			

Part Three: The phrases in the following table aim to explore the Attitude of CPR procedures for Corona patients, so please answer the following questions using the (X) or (/) mark in the place that suits you:

Q. Number	Attitude	Strongly Agree	Agree	Fair	Disagree	Strongly disagree
28.	If I don't wear a PPE or Mask, I will not participate for Covid_19patient CPR					
29.	All health care providers should be trained for CPR especially for Covid_19 patients.					
30.	I would like to perform mouth to mouth breath for Covid_19patient if nothing available to do else.					
31.	All graduate students should have the Basic Life support before get employed					
32.	After I get CPR for Covid_19patient, I will participate in another CPR for non-covid patient without getting rid of my old PPE.					

Part Four: The phrases in the following table aim to explore the Practice of CPR procedures for Corona patients, so please answer the following questions using the (X) or (/) mark in the place that suits you:

Q. Number	Practice	Yes	No	I don't know
33.	Have you witnessed a Covid_19patient with cardiac arrest?			
34.	Did you wear your PPE before initiating the Code Blue?			
35.	30:2 is the compression /ventilation ratio followed in CPR for Adults			
36.	Air way is the primary goal for Covid_19patient who has been in resuscitation			
37.	At a rate of 100-120compression/ min you give CPR to adult and Pediatric.			
38.	CAB is the sequence followed in initiating CPR?			
39.	At least 2-inch depth to be given during CPR to adult and Pediatric			
40.	Mid chest is the location you give chest compression.			
41.	2 initial breaths start with the patient who has Covid_19positive result.			
42.	All health care team should participate in the resuscitation for Covid_19patient			
43.	When you give a chest compression for Covid_19arrest patient, you should give 30 compression and 2 breaths each cycle of CPR.			

Additional Comments if you want:

……

……

……

Thanks For Your Participation

7.3 AAUP Thesis Acceptance Paper:

Arab American University — الجامعـــة العربيـــة الأمريكيـــة

Ramallah Site — موقع رام الله

نموذج الموافقة الأولية على موضوع الرسالة والمشرف

Preliminary Proposal – Thesis Topic and Supervisor

عنوان البحث باللغة العربية	تقييم مدى المعرفة والممارسة بين ممرضي قسم الطوارئ حول الإنعاش القلبي الرئوي لمرضى كوفيد -19 في مستشفيات جنوب فلسطين.
عنوان البحث باللغة الإنجليزية Research/Thesis title	Assessment of knowledge and practice among emergency department nurses about cardiopulmonary resuscitation for Covid -19 patients in Southern Palestinian hospitals
اسم الطالب/ الطالبة Student name	خليل ابراهيم خليل الشوامرة
الرقم الجامعي للطالب / الطالبة Student ID	201912832
اسم برنامج الماجستير Master program	Emergency Nursing Master Program
اسم المشرف الرئيس Main supervisor	د . أحمد البطران

اسم المشرف المشارك (إن وجد) Co-supervisor	--
البريد الإلكتروني للطالب / الطالبة Student email address	kshawamri@icloud.com
رقم هاتف الطالب / الطالبة Tel. no. of student	00970569351391
تم اطلاع المشرف على موضوع الرسالة Approval from supervisor	1. Yes /نعم
تاريخ تسليم هذا النموذج لكلية الدراسات العليا Date of submission	18/10/2020

2: ملخص حول موضوع الرسالة: لمحة عامة عن البحث بحيث لا تزيد عن 500 كلمة.

Thesis topic summary: An overview of the research, not exceeding 500 words

Covid 19 is a pandemic disease overall the world science march 2020 until today, many Palestinian citizens were being infected with this Virus approximately 46746 were suffered from this disease until now, and 402 patients were being died from the disease, with mortality rate 78 death per each million. (worldmeter.com).

CPR (cardiopulmonary Resuscitation) is an emergency lifesaving procedure performed when the heart stops beating. Immediate CPR can double or triple chances of survival after cardiac arrest occurred. (AHA).

This study aimed to assess the knowledge and practice among emergency department nurses about cardiopulmonary resuscitation for Covid -19 patients in Southern Palestinian hospitals, in order to improve our health institutional care quality and demonstrate a united protocols for dealing with CPR cases for Covid 19 patients.

I choose to study the nursing knowledge and practice especially in emergency departments about the new WHO and AHA protocols for recusation to cardiac arrest covid 19 patients, to demonstrate the level of our nursing staff team knowledge and help to apply the new protocol to improve their knowledge and practice in dealing with the cases.

After I have 3 months' volunteer in Covid 19 emergency and treatment center in Hebron, a lot of cases were being died from poor knowledge in health care team, and low staff members, experience and qualifications. there are no local studies to assess the nurses' capabilities about CPR for covid 19 patients, so I decide to choose this topic to be studied in our local health care institutions.

Finally, I hope that you will agree to me for this topic to be studied and published as a first local study in our country to help improving our health care institutions and save the patient lives to decrease the mortality rate and complications of covid 19 in Palestine.

ملاحظة: يرجى تسليم هذا النموذج الى الايميل التالي: dana.eideh@aaup.edu **وذلك قبل بأسبوع من بداية الفصل الدراسي الأول (٢٠٢٠/١٠/٢٢) وارفاق ما يلي معه:-**

1. **سيرة ذاتية حديثة للمشرف والمشرف المشارك (إن وجد).**
2. **كشف علامات الطالب (من البورتال).**

كلية الدراسات العليا:

بعد الاطلاع على الطلب المقدم من الطالب/ الطالبة، نوصي بما يلي:

- الموافقة الأولية على موضوع الرسالة والمشرف.
- عدم الموافقة على موضوع الرسالة المقترح والمشرف للأسباب التالية:

.....

.....

.....

.....

رئيس قسم الدراسات العليا:

الاسم: ----------

التوقيع: ----------

التاريخ: ----------

الملخص

هدفت هذه الدراسة إلى تقييم معرفة، وسلوك، وممارسة ممرضة الطوارئ (KAP) تجاه الإنعاش القلبي الرئوي لمرضى Covid_19 في المستشفيات الحكومية الفلسطينية بالضفة الغربية؛ تم مناقشة نهج التعامل مع حالات الإنعاش القلبي الرئوي وفقًا لإرشادات جمعية القلب الأمريكية الجديدة لإنعاش مرضى الكورونا 19.

منهج الدراسة: شملت الدراسة جميع الممرضين/ات العاملين/ات في أقسام الطوارئ في جميع مستشفيات الضفة الغربية الحكومية، وكانوا 230 ممرضا/ـة. تم استخدام دراسة وصفية مقطعية كمية لتقييم الممرضين/ات والممارسات المهنية عن طريق استبان ذاتي في الفترة الزمنية من 1 مارس إلى 15 مايو 2021. من أجل تحليل استجابة المشاركين في الدراسة من خلال الإحصاء الوصفي (الوسط، والانحراف المعياري SD).

النتائج: كان هناك 42٪ من ممرضي/ات الطوارئ الحكوميين الفلسطينيين مستوى معتدل من المعرفة تجاه الإنعاش القلبي الرئوي لمرضى Covid_19، وبالنسبة للبعد السلوكي، كان هناك 48.1٪ من الممرضين لديهم موقف محايد تجاه الإنعاش لمرضى Covid_19، و56٪ من المشاركين في الدراسة كان لديهم مستوى جيد من الممارسة تجاه الإنعاش القلبي الرئوي لـمرضى Covid_19.

الاستنتاجات: كانت هناك علاقة ذات دلالة إحصائية بين جنس عينة الدراسة، الوضع الوظيفي وتدريبهم سابقًا على الإنعاش القلبي الرئوي مع إدراك ممارسة الإنعاش لمرضى Covid_19 بقيمة $p < 0.05$.

التوصيات: عززت الدراسة لجنة التعليم المستمر وتمكين أدوارها في جميع المستشفيات الفلسطينية، واتباع سياسات صارمة وإجراءات للإنعاش القلبي الرئوي لتحسين التزام فريق التمريض والموظفين بتنفيذ بروتوكولات جمعية القلب الأمريكية (AHA). وأخيرًا، وضع بروتوكول لجميع الممرضين/ات الذين سيتم قبولهم للعمل في قسم الطوارئ، يجب أن يكون لديهم على الأقل دعم الحياة الأساسي (BLS).

الكلمات الرئيسية: ممرضي/ات الطوارئ، الإنعاش القلبي الرئوي(CPR) ، مرضى الكورونا (Covid_19)، جمعية القلب الأمريكية(AHA) .