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| RESEARCH ARTICLE

Effectiveness of Training Programme on the Quality of Cardiopulmonary Resuscitation among Health Care Providers in Critical Care Units at Governmental Hospitals in Gaza Strip

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| ABSTRACT

Rescuers' ability to properly administer cardiopulmonary resuscitation (CPR) depends on their ability to learn, remember, and apply the necessary cognitive, behavioural, and psychomotor abilities. In order to provide HCPs with the knowledge and abilities needed to do CPR in circumstances where life is at risk, such as cardiac or respiratory arrest, the researcher used CPR training classes. The training sessions will also include lectures on the theories underlying as well as skill teaching sessions, and a final exam. This study used baseline data to show the improvement in effective training program quality and comprehension. Given guidelines on how to make it better and general guidelines for applying them across all hospitals in GS. The purpose of this study was to evaluate the effectiveness of a training program for healthcare professionals working in critical care units at governmental hospitals in the Gaza Strip. In order to assess the quality and knowledge of CPR among HCPs in these institutions, researchers employed a pre-post quasi-experimental design before and after education intervention studies (Al-Shifa). The training program's efficacy effect size was calculated using partial eta squared; the average score in the pre- and post-tests, paired t-test, P value, and MD with 95% CI were as follows: total score (0.360.10 vs 0.880.06, t = 43.05, P0.001, MD = 0.519, 95% CI =0.495-0.543), and effect size by Partial eta squared were 0.980. Specialists from all over the world who advice stakeholders on how to improve the standard of HCPs (Doctors and Nurses) offered in the ICU, ER, and CCU in the Gaza Strip are in a heated debate on CRP. Governmental hospitals with continuing education committees implement rigorous strategies to improve the knowledge and clinical proficiency of nurses and doctors, Urging HCPs to put in more effort and carry out more research in order to enhance the standard of their profession, save patients, and strengthen their areas of weakness in order to become more proficient and effective from a scientific and practical perspective (HCPs). Guidelines and suggestions were made to stakeholders that might improve the standard of CPR provided for critical care in ERs, ICUs, and CCUs.

| KEYWORDS

Cardiopulmonary resuscitation (CPR), effectiveness of training program about the quality, knowledge

| ARTICLE INFORMATION

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1. Introduction

Every day, a large number of people with significant heart pain or other illnesses that might cause heart attacks seek emergency care in the hope of recovering from fatal circumstances. Cardiopulmonary resuscitation (CPR) entails actions made to restore the heart and brain's vital functions in a person who has lost consciousness and to artificially restart breathing and blood circulation until the person's natural blood flow resumes. Nurses are the first to arrive at the bedside of patients who are experiencing cardiac arrest; thus, they should be competent CPR providers. The results of one of these research suggested that even the presence of a

more skilled person can have a substantial impact on the outcome of resuscitation. Earlier studies had demonstrated the impact of the presence of trained persons on the outcome of resuscitation. Unskilled staff, as well as a delay in the delivery of massage therapy, are the two most significant factors influencing the result of CPR. The utilization of a trained, committed team for resuscitation operations greatly enhances the resuscitation process, according to the findings of multiple studies (raising the number of successful resuscitation cases from 0.4% to 30%). According to several types of research, CPR instruction improves both patient survival and the effectiveness of doctors and nurses (Erfanifam et al., 2022).

CPR When performed on victims of cardiac arrest who are unresponsive and not breathing, CPR is a vital life-saving technique. Best practice recommendations state that CPR comprises a 30:2 ratio of chest compressions to rescue breathing (ventilation). Prior to the availability of specialized technology, such as an Automated External Defibrillator (AED), CPR aims to sustain a circulation sufficient to protect brain function. Early, effective CPR has been demonstrated to save lives and enhance neurological outcomes for patients (Brenton-Rule et al., 2021).

HCPs in Gaza currently lack the knowledge and skills necessary to conduct CPR. My master's thesis data revealed that there is a knowledge gap and a poor standard of work for doctors and nurses. The goal of this study was to improve CPR knowledge, skills, and training among healthcare professionals. A better understanding of the current level of CPR knowledge and skill among these professionals will help direct future training and the implementation of strategies that will improve the care given to patients experiencing cardiopulmonary arrest in inpatient settings with limited resources.

The HCP will receive CPR training during this trial to give them the knowledge and abilities to recognize life-threatening crises such as cardiac or respiratory arrest. Effective Training Programme about the Quality of Cardiopulmonary Resuscitation among Health Care Providers in Critical Care Units at Governmental Hospital in the Gaza Strip.

2. Literature Review

A literature review is ***a*** crucial step in the research process, which serves to create a basis for the study. The literature review provides a context for comprehending current knowledge on a topic and illustrates the significance of the investigation. A literature review is a body of text that aims to review the important aspects of current knowledge, including substantive findings as well as theoretical and methodological contributions to CPR training programs that emphasize continuous chest compression, the efficiency of CPR training programs in raising rescuers' CPR performance to a standard, and more. The study demonstrated the significance of CPR performance knowledge and practice. Additionally, a number of worldwide resuscitation organizations have stressed the significance of education in performing high-quality CPR and enhancing survival from cardiac arrest to assess the Effectiveness of Training Programme***s*** about the quality of cardiopulmonary resuscitation in critical care units.

The findings of one of these research suggested that the presence of a more skilled individual can have a substantial impact on the success of resuscitation. These studies demonstrated the impact of the presence of trained personnel on the outcome of resuscitation. Every training, according to researchers, results in learning, but the depth and durability of that learning vary depending on the teaching method. The usefulness of various educational programs in fostering sustainable learning has been studied in recent studies. Given the significance of the topic and the necessity to examine how training programs affect the level of knowledge and CPR proficiency of healthcare professionals, particularly nurses, the current study examined how training programs affect nurses' knowledge and CPR proficiency. Intensive care unit work (ICU). A review of the literature revealed that after training, nurses' CPR performance and understanding greatly outperformed that of non-trained nurses. However, because the majority of nurses still use outdated CPR methods, it is important to communicate these changes during retraining sessions. Additionally, repeating these courses over time is important due to the decline in knowledge and abilities (Erfanifam et al., 2022).

The ability to react promptly and effectively to a cardiac arrest situation depends on nursing competence, while cardiopulmonary resuscitation training is required for nursing staff. To assess the impact of a systematic cardiopulmonary resuscitation training program on the competency of nurses, the critical care nurses' knowledge and performance pre- and post-structured cardiopulmonary resuscitation training program showed a very statistically significant difference. A quasi-experimental methodology was employed. Additionally, except for the age groups of the study sample, there was no statistically significant link between any of the analyzed nurses' personal characteristics and their overall performance scores before and after a structured cardiopulmonary resuscitation training program. After completing a structured cardiopulmonary resuscitation training program, critical care nurses under study showed a clear improvement in their level of knowledge and CPR performance (Elsayed et al., 2021).

To assess the Quality of performance of Health care providers regarding cardiopulmonary resuscitation in critical care units.

The goal of the study was to examine how systole or conventional CPR affected results. The foundation of systole revivification care might be represented by the man of science. Although the definitions of the best kiss of life have evolved over many years, quick transmission of high-quality CPR can significantly improve permanence scores. Investigations using CPR recording devices have made it possible to evaluate particular CPR performance criteria and their relative significance with regard to the recovery of spontaneous circulation and a patient's ability to leave the hospital permanently. The findings demonstrated that the adoption of cutting-edge tools to quantify CPR delivery metrics has provided crucial insights into CPR quality. Additional research has shown new opportunities to monitor physiological markers throughout the final moments of life and even customize CPR delivery to meet consumer demand. Exciting opportunities exist right now to examine quantitative metrics that will undoubtedly direct resuscitation care in a very purposeful manner (Abella, 2016).

3. Methodology

Research methodology is a systematic approach to solving research issues. This chapter gives a brief overview of the methodology used by the researcher to carry out this investigation. Additionally, it contains information on the research methodology, the study's setting and sampling strategy, the tool's description and development, a pilot study, the research design, data collection, the study instrument, the procedure and the analysis plan, the validity of the questionnaire, and statistical analysis.

3.1 Study design

Realize the goals of the current investigation. ICU, CCU, and ER at Governmental Hospitals in the Gaza Strip are important critical care units (ICU, CCU, and ER), and researchers used a pre-post quasi-experimental design before and after education intervention study to evaluate the effectiveness of training programs about the quality and knowledge regarding CPR among HCPs in these units (Al-Shifa). Data gathered from nurses and doctors through questionnaires was used by the researcher to carry out the study's aims. It is distributed to HCPs.

3.2 Study population

A total of 100 HCP (ICU, CCU, ER) who asked and engaged in this study comprise the study's 100-person population, which comprises doctors and nurses who worked in significant government hospitals in the GS (Al-Shifa). The hospital provides equipment viable for the ICU, CCU, and ER, as well as training for healthcare professionals. The researcher used CPR training courses to equip HCPs with the knowledge and skills necessary to perform CPR in situations where life is at risk, such as cardiac or respiratory arrest. These courses included skill-teaching sessions and lectures on the theoretical underpinnings of BLS, ACLS, and PALS final assessments. The training approach entails teaching theoretical and practical skills and having participants watch movies about actual cases. The course only has one instructor, who is the lead investigator. In numerous basic and advanced life support programs, the investigator is a qualified trainer.

Lectures, case studies, discussions, demonstrations, and simulations were all part of the training. The majority of the 2020 American Heart Association (AHA) BLS course and ACLS course material is covered in this course.

3.3 Sample and Sampling

A non-probability sample of healthcare professionals working in intensive care units, a comprehensive sample (100). The sample that the researcher used consisted of nurses and doctors who worked in critical care units. In Gaza Strip government hospitals run by the Ministry of Health (MOH), samples were taken using a purposive sampling technique from the ICU, CCU, and ER.

3.3.1 Inclusion Criteria

- All doctors and nurses employed in critical care units (ER, ICU, CCU) in government hospitals of the Ministry of Health (MOH) in Gaza Strip.

3.3.2 Exclusion Criteria

- All doctors and nurses who are trainees or volunteers.
- All workers who have been appointed for less than a year.

3.4 Study setting

Al Shifa Medical Complex hospitals were used for the study (SMC).

3.5 Data collection and study instrument

When data collection instruments were created, the researcher received consent from the university to begin the study. The research worker then obtained approval from the Ministry of Health's final board for human resources development to start distributing the questionnaires. In the subsequent research, the worker will gather the data and then finally analyze it before writing the findings.

To fulfill the study's objectives, the researcher gathered data. Information is gathered utilizing a form sheet to evaluate the level of cardiopulmonary resuscitation performed by HCPs, together with an empirical listing to evaluate the performance of the healthcare practitioner. The information is gathered using the commonly used questionnaires and by recommending using structured self-report approaches with the subjects. The knowledge assemblage process was finished by (01.08.2022) (10. 12-2022). Each participant takes around 20 minutes to complete their report. The researcher employed CPR training courses to provide HCPs with the knowledge and abilities necessary to perform CPR during training sessions, which included skill-teaching sessions, lectures on the theoretical components of BLS, ACLS, and PALS, and a final assessment. The training program consists of imparting theoretical and practical knowledge while having participants watch case-related films. The only instructor for the course will be the primary investigator. In numerous programs for both basic and advanced life support, the investigator is a trained trainer.

Lectures, case studies, discussions, demonstrations, and simulations were all part of the training. The majority of the material from the 2020 American Heart Association (AHA) BLS and ACLS courses is covered in this course.

3.5.1 The Study Instrument:

The researcher used Questionnaires that were designed and constructed to measure the quality of knowledge of the health care provider toward cardiopulmonary resuscitation. To construct the questionnaires, the employ an exploratory study when close-end questions present to (100) healthcare providers who select according to the study's original criteria; the questionnaires were constructed and composed: constant of information collection that was utilized to achieve this study. Information was collected in 2 stages; in the first stage, the questionnaire was dispense to participants, and each of them was allowed sufficient time to fill it; all participants gave back the Questionnaire.

The principal investigator designs a 2-hour CPR training course specifically adapted for HCPs. The hospital has a simulation center, and that center will use for the training sessions, which include skill teaching sessions, lectures on the theoretical aspects of BLS, ACLS, PALS, and final assessment. The only instructor for the course is the lead investigator. In numerous programs for both basic and advanced life support, the investigator is a trained trainer. The learning objective of the course was to provide the HCP with the ability to recognize life-threatening emergencies such as cardiac or respiratory arrest and the skills to provide CPR. The training sessions, which comprised skill teaching sessions, lectures on the theoretical components of BLS, ACLS, and PALS, and the final assessment, took place in the hospital's simulation facility. The only instructor for the course is the lead investigator. In numerous programs for both basic and advanced life support, the investigator is a trained trainer. The course's learning goal was to give the HCP the knowledge and skills necessary to do CPR and recognize life-threatening crises such as cardiac or respiratory arrest. Lectures, case studies, discussions, demonstrations, and simulations were all part of the training. The majority of the material from the 2020 American Heart Association (AHA) BLS and ACLS courses is covered in this course.

The 2020 AHA Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care will be presented through films and an interactive presentation that encourages audience participation. The practical application of utilizing an AED is adapted into the AHA BLS course content. Two experts assessed the modified curriculum to improve its content validity. Through interactive skill training sessions using manikins that last two hours, the practical component of the course will be delivered. The CAB method will cover one- and two-person newborn, toddler, and adult resuscitation techniques. There are eight training sessions. The participants will receive the handbook or course materials, and there will be self-directed learning activities. All instruction will take place in person. Individuals will have plenty of chances to put their skills into practice.

To measure the effectiveness of CPR performed by medical professionals, questionnaires were created and devised. Utilizing an exploratory study that was closed-ended and comprised 32 questions that healthcare practitioners chose based on the project's initial parameters, the questionnaires were created. A survey on "Knowledge and practice assessment of the Quality of CPR among HCPs in Critical Care Units" will be developed. According to the AHA and the researcher's expertise in the hospital's field, 2-point Likert scales will be used to develop surveys. The knowledge and skills in BLS before and after the intervention were the major outcomes of interest. A self-administered structured questionnaire from the BLS curriculum was utilized to evaluate pre- and post-course knowledge. The questionnaires were constructed and composed:

3.5.2 Part 1: demographic

Composed of seven criteria, including sex, age, academic standing, professional experience, the field of assignment, formal CPR training, and frequency with which the client will receive resuscitation.

3.5.3 Part 2: Knowledge

Knowledge of chest compression quality and cardiopulmonary resuscitation among healthcare professionals. Compressions should begin within 10 seconds. Push vigorously, moving at least 2 inches (5mm) per minute, allowing the chest to fully recoil and minimizing pressure interruptions. Give efficient breaths and avoid over ventilating. If there is no advanced airway, alter the pressure every 20 minutes, or sooner if you are weary, using a 30:2 pressure to ventilation ratio.

3.5.4 Cardiac arrest and CPR: depending on:

ABLS: The 2020 American Heart Association guidelines for CPR and emergency cardiovascular care, along with research-related questions that assess the knowledge of HCPs in the second portion of the study. This section has 32 questions on pathology's causes, but also about who will recognize a cardiac arrest and how to actually revive a heart.

3.6 Study period

The study was conducted in time from 16.11-2021 to 01.06-2023.

3.7 Validity of Questionnaire

Ten specialists from the Islamic University of Gaza (IUG) and MOH, who have a strong track record in medical research and verified the instrument and content validity, got copies of the questionnaire. The questionnaire was modified in response to the experts' ideas after they had reviewed the instrument and determined whether the items were pertinent and appropriate for the study's goals. The experts' opinions and suggestions were taken into consideration when adding the questions.

3.8 Reliability

To determine a questionnaire's accuracy, the Statistical Package for Social Sciences (SPSS) application used Cronbach's Alpha test. Test-retest reliability was employed in the research. A small set of participants in the study received questionnaires, and then two weeks later, they received the same test.

3.8.1 Cronbach's Alpha

The researcher ensured the accuracy of the study questionnaire during the Coefficient of Alpha. Shows values of Coefficient of Alpha to each questionnaire domain of participants also the reliability of domains; values of Cronbach's Alpha were in a range from 0.830 which shows good reliability of the entire questionnaire.

3.9 Pilot study:

10% (10%) of the subject was Carrie's in preliminary research. To highlight how understandable and useful the tools are, it was put to the test. The information from the pilot research helped to modify the tools; if needed, elements were added or corrected as a result of the information. The final shape was created after a modification was made. The main statistical sample is not included in the sample or findings from the pilot study.

3.10 Ethical and administrative considerations

The scientist admitted to all or any moral difficulties in order to finish the analysis. To allow the dissemination of questionnaires to nurses and doctors, an agreement must be obtained from the college, and official clearance must be obtained from the general directorates of human resources development of the MOH in GS. Gather data from the (ER, CCU, ICU) departments with the approval of the 100 responders and assurances that the data would only be used for study and that confidentiality would be upheld. Additionally, participants have the freedom to decline or end their participation in the study at any time.

3.11 Statistical analysis

SPSS was used by the researcher to examine the data. The survey was loaded into and analyzed using SPSS version 23.

3.12 Limitations of the Study

During the course of this investigation, the researcher encountered many obstacles, some of which included volunteers who refused to meet certain requirements for inclusion in the study. In addition, the researcher received no outside financial help. Lack of resources in terms of care standards of quality, roadblocks during the distribution of surveys to the hospital because of the covid19 situation in GS, and power outages.

3.13 Time table of the study.

The study was carried out between November 16, 2021, and January 12, 2023. It began with the preparation of a research proposal, followed by receiving approval from the university to begin the study, approval from the MOH, and approval from the Helsinki Committee to begin data collection. After designing the data collection instruments, I began data collection, and after that came data analysis and writing.

4. Results and Discussion

4.1 Sample distribution according to socio-demographic data.

The present study is RCT which included 100 participants. The socio-demographic characteristics that were studied included age, sex, profession, department, experience, education level, certificate about CRP, and period of the last course (BLS, ILS, ALS).

4.1.1 Distribution of the study population according to their gender.

Figure 4.1 Pointed out that more than half of the study population were males (78.0%) and 22.0% were females.

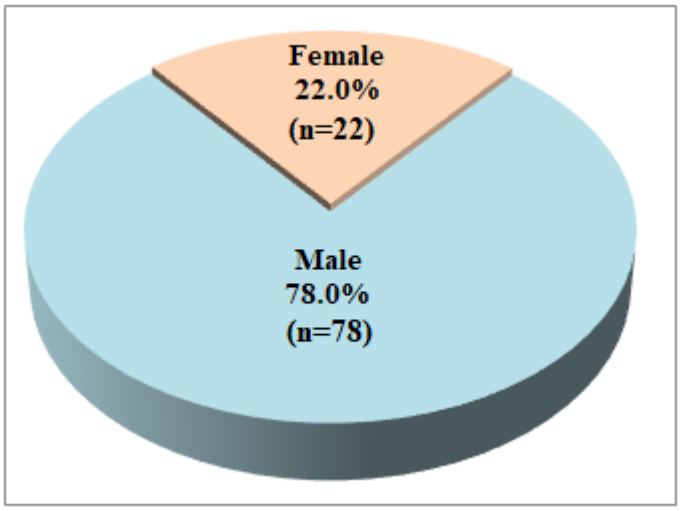
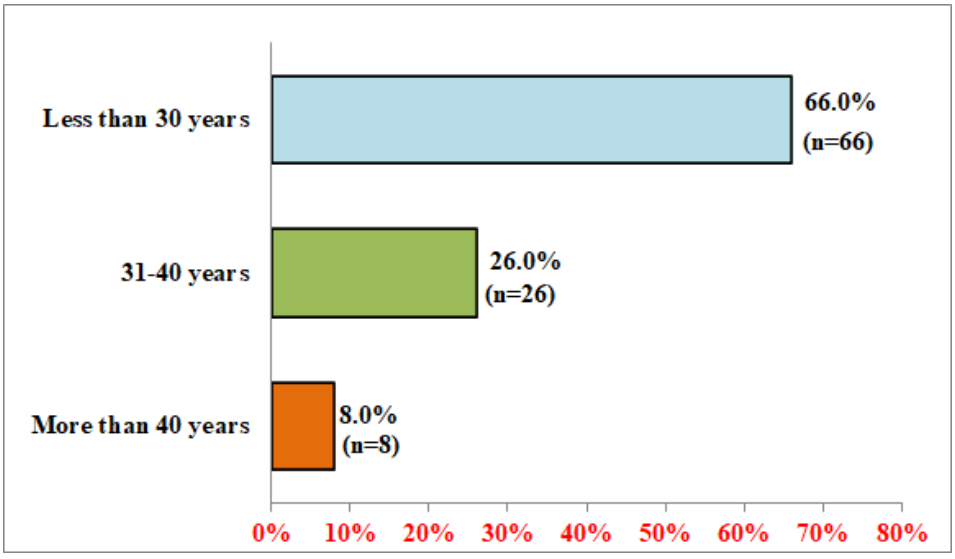


Figure (4.1): Distribution of the study population according to their gender.

4.1.2 Distribution of the study population according to their age groups.

Figure 4.2 illustrates that the highest age groups of the participants were aged less than 30 years (66%), followed by 26% of them being aged from 31 to 40 years. The results showed that the lowest age groups of the study were aged more than 40 years (8%).



1. Figure (4.2): Distribution of the study population according to their age

4.1.3 Distribution of the study population according to their academic qualification.

Figure 4.3 Illustrates that the majority of the study population finished a bachelor's degree (75%), while 15% of them finished a master's degree, and 6% of them finished a diploma degree. On the other hand, the results showed that the lowest groups of the study participants were of who finished their PhD degree (4%).

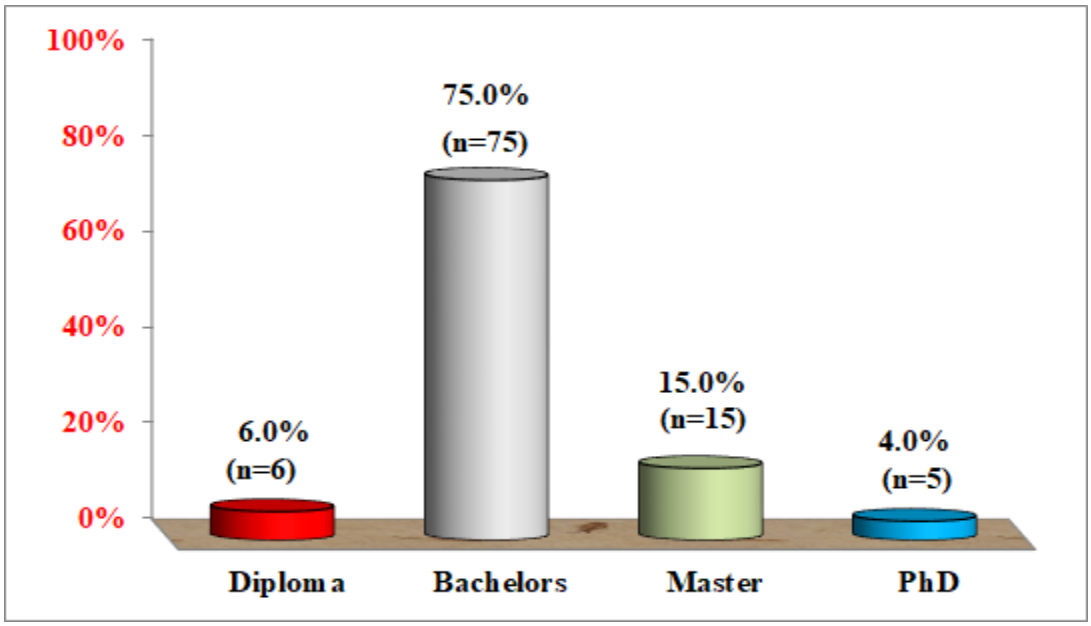


Figure (4.3): Distribution of the study population according to their academic qualification

4.1.4 Distribution of the study population according to their socio-demographic information.

The distribution of the study population according to their profession showed that 50.0% were Physicians and 50.0% were nurses. The table pointed out that the majority of the study population worked in the ER department (40%), while 30% of them were in the ICU department and 30% in CCU. The table illustrated that more than half of the study population have experience from 1 to 5 years (52%), while 28% of them have experience from 6 to 9 years, and 20% have experience from more than 10 years. The results of the study showed that 87% of participants have a certificate in CPR, and 85.1% of them have a special course in CPR. The table pointed out that the majority of the study population had the last course in BLS, ILS & ALS within less than 1 year (51%), while 31% of them had a course in BLS, ILS & ALS before 1 to 2 years and 18% have the course in BLS, ILS & ALS before more than 2 years.

Table (4.1): Distribution of the study population according to their socio-demographic information.

Demographic data		Count	%
Profession	Physician	50	50.0%
	Nurse	50	50.0%
Department	ER	40	40.0%
	CCU	30	30.0%
	ICU	30	30.0%
Experience	1-5 Years	52	52.0%
	6-9 Years	28	28.0%
	>10Years	20	20.0%
certificate about CPR	Yes	87	87.0%
	No	13	13.0%
If you have a certificate in CPR, do you have a special course? (n=87)	Yes	74	85.1%
	No	13	14.9%
Last course (BLS, ILS, ALS) within?	< 1 year	51	51.0%
	1- 2 years	31	31.0%
	> 2 years	18	18.0%

Age, sex, profession, department, experience, degree of education, certificate about CRP, and length of the most recent course were among the sociodemographic factors that were investigated (BLS, ILS, ALS).emphasized that there were 22.0% females and 78.0% men in the study population. Showed that the highest age categories among the participants were those under 30 years old (66%) and those between 31 and 40 years old (26%). The study's lowest age categories were those older than 40 (8%); according to the findings showed that 75% of the participants in the study completed a bachelor's degree, while 15% completed a master's degree, and 6% completed a diploma degree. On the other hand, the study's participants who completed their doctoral degrees (4% of the total) comprised the lowest group of participants.

According to how the study population was distributed by profession, 50.0% of participants were nurses, and 50.0% were physicians. The table showed that 40% of the study population worked in the emergency room, 30% in the intensive care unit, and 30% in the critical care unit showed that 52% of the study group has experience ranging from 1 to 5 years, 28% has experience ranging from 6 to 9 years, and 20% has experience ranging from more than 10 years. According to the study's findings, 85.1% of participants had taken a particular CPR course, and 87% of participants had a CPR certificate. Showed that 51% of the research group had completed their most recent BLS, ILS, and ALS course within the previous year, 31% had done so within the previous 1 to 2 years, and 18% had done so within the previous 2 years. These results were in line with those of a study by Al-Ftlawi (2011) and Hamza (2012) regarding socio-demographic factors.

Additionally, these results were different from those of the study conducted by Ayala et al. (2013), which revealed that the study population was primarily female (94.6%), had a mean age variance of 42.7 (7.9) years, was primarily married (60.2%), and had children (69.9%). Work-related characteristics included being nurses in the majority (58.1%), being dependable (92.5%), and having over five years of experience in their present department (65.6%). In terms of the study's primary participants, 60.3% of them were nurses, and 39.7% were doctors.

These findings were different from those of the study by Lakshmi et al. (2018), which concluded that no nurse could pass the necessary skills, including ensuring adequate pressure rate while operating the AED, using a bag valve mask, and administering D/S to patients who were in systole and checking the scene for safety and the heartbeat.

The effectiveness effect size of the training program, with the average score pre-and post-test, paired t-test, P value, and MD with 95%CI as the following in total score (0.360.10 vs 0.88±0.06, t = 43.05, P<0.001, MD = 0.519, 95% CI =0.495-0.543) and effect size by Partial eta squared was 0.980.

The mean difference in the efficiency of the training program according to gender is revealed in Table 4.4. The table demonstrated that there was a higher statistically significant difference between the post intervention program and the pre intervention program, with large effect size, for both males (0.890.05 vs 0.360.09, paired t-test =40.765, P-value 0.001 & Effect size =0.99) and females (0.870.08 vs 0.400.10, paired t-test =17.486, P-value 0.00 In contrast, neither the pre-training nor the post-training programs' average scores between males and females were statistically substantially different (P>0.05).

According to age groups, table 4.5 displays the mean difference in the training program's effectiveness. The table indicated that the post-interventional program had a higher statistical significance than the pre-interventional program, with high effective sizes for age groups less than 30 years (0.890.06 vs 0.350.09, paired t-test =38.541, P-value 0.001 & Effect size =0.99), 31 to 40 years (0.890.07 vs 0.400.10, paired t-test =17.842, P-value The average score across age groups, however, did not alter statistically substantially between the pre- and post-training programs (P>0.05).

The training program's average grade is based on educational attainment. The table demonstrated that there was a greater statistically significant difference between the pre-interventional program and the post-interventional program, with a high effect size, for diplomas (0.920.06 vs 0.280.08, paired t-test =14.806, P-value 0.001 & Effect size =0.99), bachelors (0.890.06 vs 0.370.10, paired t-test =38.037, P-value In contrast, neither the pre-training programs nor the post-training programs' average scores among education levels exhibited any statistically significant difference (P>0.05).

These effects of the existing study were similar to the study; Al-Janabi et al. (2014) results demonstrated of the study exposes that the major of nurses had a lack of awareness connected to CA and CPR. The nurses' data on CPR protocol, gender, and age range did not significantly correlate. The study's findings suggest that there was a strong correlation between the nurses' total CPR data

and their educational background. Additionally, there is no correlation between nurses' knowledge of CPR technique and interpersonal skills, work environment, formal coaching, and CPR performance on a client. It is significant to note that the majority of nurses lacked knowledge of CA and CPR.

The average ratings of training courses as indicated by CPR certificates are shown. The table demonstrated a statistically significant difference between the pre- and post-interventional programs for those who have a CPR certificate (0.370.10 vs 0.890.06, paired t-test =39.808, P-value 0.001 & Effect size =0.98) and those who don't (0.380.11 vs 0.90.04, paired t-test =15.898, P-value 0.001 & Effect size The average score between those who have CPR certificates and those who don't in both the pre- and post-training program showed no statistically significant difference, according to the data (P>0.05). the training program's overall grade based on the CPR-specific course. The table demonstrated a statistically significant difference between pre- and post-interventional programs for those who had taken a special course in CPR (0.370.09 vs 0.890.06, paired t-test =36.679, P-value 0.001 & Effect size =0.98) and those who hadn't (0.330.11 vs 0.860.07, paired t-test =14.874, P-value 0.001 The average score between those who have taken a special CPR course and those who haven't in both the pre- and post-training program showed no statistically significant difference, according to the data (P>0.05).

The training program's overall grade in relation to the CPR-specific course. The table showed that among those who have taken a special CPR course with a duration of less than a year (0.38 0.10 vs 0.9 0.06; paired t-test = 29.142; P-value 0.001 & Effect size = 0.98), from 1 to 2 years (0.36 0.08 vs 0.88 0.07; paired t-test = 25.417; P-value 0.001 & Effect size = 0.97). and longer than 2 years (0.360.11 vs. 0.880.05; paired t-test =18.439; P-value 0.001; Effect size =0.99). The average score among those who completed the last course in the pre- and post-training programs did not, however, differ statistically substantially (P>0.05).

These results concurred with research by Saramma et al. (2016). According to the study's findings, women made up the majority of the 206 nurses—93 of them were certified in cardiopulmonary resuscitation, and 113 weren't. According to the study, there was a substantial statistical increase in mean data levels and overall performance both before and after completing a formal, certified cardiopulmonary resuscitation educational program (P = 0.000). They discovered that certified and uncertified nurses who performed cardiopulmonary resuscitation had similar mean data scores, with certified nurses scoring the next mean score (P = 0.140). The researcher's formal certified curriculum for teaching cardiopulmonary resuscitation improves skill and knowledge in the field. However, a significant semi-permanent impact could not be identified. A requirement exists for typical perennial recertifications.

5. Conclusion

The work is justified by the fact that it deals with important issues in situations where the study has demonstrated the value of the data and noted excellent cardiac resuscitation performance. This chapter will give an overview of each study, along with the findings conclusions and trustworthy applications. Over analysis, a recommendation is made to support the granted study. According to a study, hospitals should develop a system of manuals that thoroughly explain all the most recent developments and reveal and monitor cardiac resuscitation. Annual audits should be submitted using the reference book method, and any flaws should be addressed with corrective action.

5.1 Recommendation

Researchers from all over the world are using CRP as a major argument in their recommendations for stakeholders to improve the standard of HCPs (Doctors and Nurses), to offer in (ICUs, ER, CCU) in the Gaza Strip.

1. To assess the effectiveness of CPR training health care professionals (HCP), CPR, and increase awareness, programs are being developed that train participants in a large sample size.
2. A training study on CPR with a sizable sample size was conducted to assess if the department's critical care unit required a mandatory CPR refresher course (ER, ICU, and CCU). High-quality chest compression can result from practicing proper rate, depth, and recoil because it ensures that HCPs on the training course reach the proper rates and depths.
3. In order to preserve the lives of their students, educators and administrators must take into account integrating ALS and basics into the curriculum.

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References

[1] Abella, B. S. (2016). High-quality cardiopulmonary resuscitation. *Current Opinion in Critical Care*, *22*(3), 218 224. https://doi.org/10.1097/mcc.0000000000000296.

[2] Ayala, E., & Carnero, A. M. (2013). Determinants of burnout in acute and critical care military nursing personnel: A cross-sectional study from Peru. *PLoS ONE*, *8*(1), e54408. https://doi.org/10.1371/journal.pone.0054408.

[3] Al-Ftlawi D. (2012) *Determination Of Nurses' Knowledge Toward Care Provided To Patients With Acute Myocardial Infraction In Al-Najaf City. Kufa journal for nursing sciences,2, 2: 1-11*

[4] Brenton-Rule, A., Harvey, D., Moran, K., O'Brien, D., & Webber, J. (2021). Knowledge and perceptions of cardiopulmonary resuscitation amongst New Zealand podiatrists: A web-based survey. *Journal of Foot and Ankle Research*, *14*(1). https://doi.org/10.1186/s13047-021-00481-9

[5] Erfanifam, T., Kuchaki, Z., Taheri, M., & Esfahani, H. (2022). The effect of CPR educational package on knowledge and performance of nurses working in intensive care units: A review study. *Journal of Family Medicine and Primary Care*, *11*(5), 1677. https://doi.org/10.4103/jfmpc.jfmpc_1938_21PCBS. (2020). On the Occasion of the International Population Day 11/07/2020.: PCBS.

[6] Elsayed, R., Sayyed, J., Hussein, E., & Abd ELmeguid, N. (2021). Effect of a structured cardiopulmonary resuscitation training program on nursing' competence. *Mansoura Nursing Journal*, *8*(3), 137-147. https://doi.org/10.21608/mnj.2021.213173

[7] Hamza AH.2012) *The efficiency of Nursing Management toward Pain*. Kufa *Journal for nursing sciences, 2012*; 2, 3:9-14

[8] *How to measure high-quality CPR*. (2014, May 27). EMS1. https: //www.ems1. com/ems-products/cpr-resuscitation/articles/how-to-measure-high-quality-cpr-XBfIKVyap9hwIYoS/

[9] Saramma, P., Raj, L., Dash, P. and Sarma, P., (2016). Assessment of the long-term impact of formal certified cardiopulmonary resuscitation training program among nurses. *Indian Journal of Critical Care Medicine,* 20(4),226-232.