Arab American University

Faculty of Graduate Studies

The Knowledge and Attitude among High-School Age 16 To 18 Years Old Regarding CPR In the Southern Areas of Palestine – Hebron City – A Cross-Sectional Study

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This thesis was submitted in partial fulfillment of the requirements for the Master's degree in the Medical-Surgical Nursing

June / 2025

Thesis Approval

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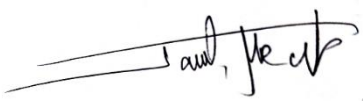
1. Dr. Mohammed Jallad: Supervisor	
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Declaration

I, Nirmin Jamil AbuKhairan, hereby declare that the thesis proposal titled "[CPR Knowledge and Attitude among High School Students Aged 16 – 18 Years Old in the Sothern Areas of Palestine – A Cross-Sectional Study]" is an original work conducted by me under the guidance and supervision of Dr. Mohammad Jallad. This proposal is submitted in partial fulfillment of the requirements for the Master's degree at the Arab American University.

I confirm that this work has not been submitted in any form for any other degree or diploma at any other university or institution. All sources of information and literature used in this proposal have been appropriately acknowledged.

I understand that any violation of the above can result in disciplinary action according to the policies of the Arab American University.

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Dedication

This work is humbly dedicated to the incredible individuals who have walked beside me, offering their unwavering support and encouragement through every step of my academic journey.

To my beloved mother, Nashat, words cannot fully express the depth of my gratitude. You have been my guiding star, the constant source of love, patience, and strength. Your sacrifices, both seen and unseen, have paved the way for me to pursue my dreams. From the late-night conversations filled with encouragement to the quiet moments where your belief in me never wavered, you have been the foundation upon which I have built my confidence. Your wisdom, resilience, and unconditional love have given me the courage to continue even when the path seemed insurmountable. For everything you have done and continue to do, I dedicate this work to you, with endless love and gratitude.

To my dear brother, Mohammed, your constant support has been a blessing in my life. You have always been there to remind me of my potential, offering words of reassurance and encouragement at just the right times. Through your own example of perseverance, you've shown me the value of hard work and determination. Thank you for always believing in me, for listening to my concerns, and for helping me stay focused on my goals. Your presence in my life has been an anchor, and I am deeply grateful for your support.

To my sister, Shireen, your encouragement and care have been a source of strength and comfort throughout this journey. You've provided me with a safe space to share my struggles, always offering kind words and a shoulder to lean on when I needed it most. Your unwavering belief in my abilities has helped me push through moments of doubt, and I am

forever grateful for your love and support. You've been not only a sister but also a friend, and this work is a testament to your influence on my life.

To my amazing friends, who have been by my side through thick and thin, thank you for your endless patience, understanding, and encouragement. You have cheered me on during my highs and provided comfort during the lows, all while reminding me that I am never alone in this journey. Your laughter, companionship, and unyielding support have brought light to even the most stressful of times. From the countless hours spent listening to my worries to celebrating every small victory along the way, your friendship has been an integral part of my success. I am truly lucky to have you all in my life, and this work would not have been possible without you.

To each of you, I dedicate this work as a token of my deep appreciation. Your belief in me has been the driving force behind my perseverance, and your support has carried me through the most challenging moments. I am endlessly grateful for your love, kindness, and encouragement, which have shaped me into the person I am today.

Acknowledgments

I would like to express my deepest gratitude to my supervisor, Dr. Mohammed Jallad, for his unwavering guidance, valuable insights, and constant encouragement throughout the course of this research. Your expertise and dedication have been instrumental in the successful completion of this thesis.

Thank you for your patience, and support, and for always believing in my abilities. Your constructive feedback and thoughtful advice have significantly enhanced the quality of this work. I am truly grateful for your mentorship and for the countless hours, you have invested in helping me achieve my goals.

With sincere appreciation,

Nirmin.

Abstract

Background: Cardiopulmonary resuscitation (CPR) is a critical life-saving technique, yet its awareness and understanding among high school students are often insufficient. This study aims to assess the knowledge and attitude towards CPR among high school students aged 16 to 18 in Hebron city, located in the southern areas of the West Bank.

Methods: A cross-sectional study was conducted with a sample size of 380 high school students from various schools in Hebron city. Participants were selected using a stratified random sampling method. Data collected through a structured questionnaire, which assessed students' knowledge of CPR procedures, their attitudes toward learning and performing CPR.

Results: The findings revealed that while a significant proportion of students had heard of CPR, detailed knowledge about the correct procedures and techniques was limited. Only 30% of participants could correctly identify the steps of CPR, and less than 20% had received formal training. Attitudes towards CPR were generally positive, with 75% of students expressing a willingness to learn and perform CPR if properly trained. However, there was a notable lack of confidence, with only 25% of students feeling capable of performing CPR in an actual emergency.

Conclusion: The study underscores a critical need for comprehensive CPR education programs in high schools within Hebron city. Incorporating CPR training into the school curriculum and organizing workshops could significantly improve students' knowledge and confidence. These efforts are essential for equipping young individuals with the skills necessary to respond effectively in life-threatening situations, potentially saving lives.

Keywords: CPR, Highschool Students, Emergency Situations, Curriculum, Youth training.

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List of Abbreviations

Abbreviations	Meaning
CPR	Cardiopulmonary resuscitation
Ca	cardiac arrests
OHCA	out-of-hospital cardiac arrest
AED	automated external defibrillator
HBM	Health Belief Model
TPB	Theory of Planned Behavior
SCT	Social Cognitive Theory
BLS	Basic Life Support
IRB	Institutional Review Board
SPSS	Statistics Package for Social Science

Chapter One: Introduction

1.1 Background

Cardiopulmonary resuscitation (CPR) is a vital emergency procedure that can significantly enhance the chances of survival for individuals experiencing cardiac arrest. Prompt administration of CPR by bystanders has been shown to triple survival rates compared to cases where CPR is not performed (American Heart Association, 2020; Perkins et al., 2015). Given its life-saving potential, there has been a global emphasis on increasing public CPR awareness and education, particularly among adolescents and young adults.

The worldwide incidence of cardiac arrests (CA) has risen significantly, turning it into a major public health concern (Chauvin et al., 2018). CPR is crucial for maintaining blood circulation and preventing brain damage (Malmström et al., 2017). The survival rate of CA is over three times higher for individuals who received bystander CPR compared to those who do not (Cho et al., 2021).

Early CPR and public CPR education have been highlighted to improve the survival rate of out-of-hospital cardiac arrest (OHCA) patients (Hwang et al., 2021). Bystander CPR is essential for increasing the survival rate and improving neurological outcomes for OHCA victims (Geri et al., 2017). Previous research suggests that educating at least 15% of the population in CPR is necessary to significantly boost the survival rate of OHCA.

However, achieving this target through voluntary public education is challenging. Therefore, implementing mandatory CPR training for schoolchildren might be essential (Ko

et al., 2023). Increasing early CPR education for schoolchildren could result in long-term improvements (Ko et al., 2023).

High school students, aged 16-18 years, represent a crucial demographic for CPR education initiatives. This age group is often receptive to learning new skills and can serve as effective disseminators of CPR knowledge within their communities (Böttiger & Van Aken., 2016). Assessing CPR knowledge and attitudes among high school students is essential for understanding current preparedness levels and identifying gaps that may hinder effective emergency response in critical situations.

In Palestine, where emergency medical services may face challenges due to political and geographical constraints, bystander CPR becomes particularly crucial. However, research on CPR knowledge among Palestinian youth remains limited, especially in southern regions like Hebron. This research aims to provide insights into the existing knowledge base, attitudes toward CPR, and readiness to respond to cardiac emergencies. By addressing these factors, strategies can be developed to enhance CPR training programs and ultimately improve community resilience in emergency medical care.

1.2 Problem statement

CPR is a critical skill that significantly enhances the outcomes of individuals experiencing cardiac arrest. However, there is no research on the CPR knowledge and attitudes among high school students aged 16-18 in Hebron City, located in southern Palestine. Understanding the current state of CPR awareness and readiness in this

demographic is crucial for developing effective educational programs and policy recommendations.

Despite the proven benefits of early CPR in saving lives, there is a lack of comprehensive data on how well-prepared high school students in Hebron City are to perform CPR during emergencies. This knowledge gap poses a significant barrier to improving community resilience and response to out-of-hospital cardiac arrests (OHCA) in the region. Insufficient CPR training and awareness among adolescents may hinder timely intervention in life-threatening situations, potentially leading to preventable loss of lives.

Therefore, this study aims to assess CPR knowledge levels, attitudes towards CPR training, and perceived obstacles to learning and performing CPR among high school students aged 16-18 in Hebron City, Palestine. This knowledge gap hinders the development of targeted CPR education programs that could enhance community emergency response capabilities. By identifying these factors, the study intends to provide insights that can guide tailored CPR education initiatives for this specific demographic

1.3 Significance of the Study

This study is important for many groups, especially teachers, policymakers, and the general public, because it helps improve health education and emergency preparedness in Palestinian society. By looking at what high school students in Hebron know and feel about CPR, the study gives a clear picture of where education is needed. This information helps schools and teachers create better lessons and programs that teach students important CPR skills in a way that fits their age and understanding.

For policymakers, the study offers helpful insights into how to improve public health and reduce deaths from sudden heart problems. In areas where emergency help may be delayed, quick CPR can save lives. The results support including CPR training in school rules, public health efforts, and youth programs. This fits with worldwide goals to help people, especially the youth, take action during emergencies.

At the community level, the study helps make society stronger and better prepared. When young people know how to do CPR and are willing to help, their communities can respond faster during health emergencies. This is especially important in places like Hebron, where getting quick medical help can be difficult. Teaching CPR and building confidence in using it can lead to quicker actions and better chances of survival.

In short, the study aims to improve health and emergency readiness in Hebron by finding out what high school students know about CPR and what stops them from learning it. The results can help guide school programs, prepare young people to respond in emergencies, and improve overall public health in southern Palestine.

1.4 Objectives of the Study

1.4.1 Main objective

The main objective of this study is to assess the level of knowledge and attitudes towards cardiopulmonary resuscitation (CPR) among high school students aged 16 to 18 in Hebron city, southern West Bank.

1.4.2 Specific objectives:

- To measure the level of CPR knowledge among high school students
- To assess students' attitudes towards learning and performing CPR
- To analyze the relation of demographic factors to CPR knowledge and attitudes
- To identify barriers that hinder high school students from receiving formal CPR training, such as access to training programs, resources, and awareness.
- To provide recommendations for enhancing CPR education among high school students.

1.5 Research Questions

1. What is the current level of CPR knowledge among Hebron's high school students?
2. What attitudes do students hold toward performing CPR?
3. How do demographic factors (age, gender, school type) influence CPR knowledge?
4. What barriers prevent students from receiving CPR training?

1.6 Study Hypotheses

The study will test the following hypothesis**:**

H1: There are no significant statistical differences at the level ($\alpha \leq 0.05$) in the CPR knowledge and attitude among high school students aged 16-18 in Hebron City, Palestine due to their Age.

H2: There are no significant statistical differences at the level ($\alpha \leq 0.05$) in the CPR knowledge and attitude among high school students aged 16-18 in Hebron City, Palestine due to their Gender.

H3: There are no significant statistical differences at the level ($\alpha \leq 0.05$) in the CPR knowledge and attitude among high school students aged 16-18 in Hebron City, Palestine due to their School grades.

H4: There are no significant statistical differences at the level ($\alpha \leq 0.05$) in the CPR knowledge and attitude among high school students aged 16-18 in Hebron City, Palestine due to their School types.

1.7 Conceptual and Operational Definitions

- CPR (Cardiopulmonary Resuscitation):

CPR will be defined as the procedure involving chest compressions and rescue breaths as described in the American Heart Association guidelines. Knowledge of CPR will be measured through a questionnaire assessing the correct steps and techniques of CPR (American Heart Association. (2020).

- CPR Knowledge:

Conceptual Definition: Understanding of CPR Procedures

Understanding of Cardiopulmonary Resuscitation (CPR) procedures refers to the extent to which an individual comprehends the essential steps and underlying purpose of performing CPR in response to a cardiac emergency.

This includes the ability to recognize the signs of cardiac arrest, knowledge of the correct sequence of actions (such as checking responsiveness, calling for emergency assistance, initiating chest compressions, and delivering rescue breaths), and familiarity with the use of an automated external defibrillator (AED) when available. Such understanding reflects both theoretical knowledge, such as compression depth and rate and procedural know how such as the proper hand placement and rhythm during compressions (Perkins et al., 2015).

A strong conceptual grasp of these procedures is crucial, as timely and correctly performed bystander CPR can double or even triple survival rates in cases of out-of-hospital cardiac arrest (Böttiger et al., 2016).

- Attitudes towards CPR:

Attitudes towards CPR among high school students encompass their beliefs, perceptions, and emotional responses regarding the importance, effectiveness, and ethical considerations of learning and performing CPR. It includes their willingness to undergo CPR training, confidence in their ability to perform CPR effectively, and their views on its impact on saving lives within their community.

- High school students

Participants will be students enrolled in grades 10 to 12 in high schools within Hebron city, aged 16 to 18 years, (National Center for Education Statistics. (2021).

1.7.2 Operational definition

- **Knowledge:**

Operational: Score on 14-item questionnaire (Yes-No, True-False, MCQs). The knowledge section was used from previous studies and achieved the required validity and reliability. Scores will be calculated based on the number of correct answers, with higher scores indicating greater knowledge (Yeow et al., 2021).

- **Attitude:**

Attitude was measured using a Likert-scale tool designed to assess the attitudes toward CPR. This scale uses a 5-point Likert format ranging from "Strongly Disagree" to "Strongly Agree".

1.8 Study Variables

- **Independent variables:**
- socio-demographic factors such as age, gender, socioeconomic status, educational background, and cultural factors.
- **Dependent variable:**

- CPR Knowledge and Attitudes among high school students aged 16-18 in the southern areas of Palestine specifically in Hebron City.
- barriers such as access to training programs, availability of resources, awareness of CPR importance, and cultural or logistical barriers.

Chapter Two: Literature Review

2.1 Introduction

This chapter synthesizes theoretical frameworks and empirical evidence surrounding CPR education for adolescents. The review establishes the study's conceptual foundation while identifying gaps in existing knowledge about Palestinian youth's CPR preparedness.

2.2 Theoretical Framework

2.2.1. Health Belief Model (HBM)

The Health Belief Model (HBM) is one of the most widely used frameworks for understanding health behaviors, including first aid training like CPR. It posits that individuals' readiness to act depends on their perceptions of:

Perceived Susceptibility: Students may not feel at risk of encountering a situation where CPR would be necessary, which could explain the lower levels of knowledge and willingness to engage in CPR training. This study should assess whether students feel that cardiac emergencies are a real and relevant risk within their community.

Perceived Severity: CPR education might highlight the severity of cardiac arrest situations to build awareness of how lack of intervention can result in death or permanent damage. Understanding the consequences could increase motivation to learn and practice CPR.

Perceived Benefits: When students understand the life-saving potential of CPR, it increases the likelihood of engaging in training. This study could analyze how much students perceive CPR as a valuable skill in their personal and community life.

Perceived Barriers: Students may have concerns such as fear of doing CPR incorrectly, lack of confidence, or limited access to training programs. Addressing these perceived barriers, such as through school-based training programs, could increase their willingness to learn and apply CPR.

Cues to Action: External factors such as public health campaigns, school programs, or witnessing a real-life emergency can serve as triggers for students to take action and learn CPR. Incorporating CPR into school curricula can serve as a cue to action for younger populations.

Self-Efficacy: Confidence in the ability to perform CPR is critical. CPR training programs that offer practical, hands-on experience can improve students' self-efficacy, making them more likely to act in an emergency. The study's data on confidence levels could be tied to this concept.

While valuable, HBM has limitations when applied to collective cultures like Palestine's, where family/community influences may outweigh individual perceptions.

2.2.2. Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) offers another relevant theoretical lens, emphasizing three factors that predict individuals' intentions and behaviors:

Attitude Toward the Behavior: The more positive the attitude toward learning CPR, the more likely students are to engage in CPR training and perform it when necessary. This aligns with the study's objective of measuring students' attitudes toward CPR and understanding how attitudes influence their willingness to participate in CPR training.

Subjective Norms: This refers to the influence of others—peers, family members, or teachers—on students' decision to learn CPR. If CPR is seen as socially important or normative within the school environment, students are more likely to engage with it. This concept could be explored further by examining whether family members or community leaders have an impact on the students' decisions to learn and perform CPR.

Perceived Behavioral Control: This aligns closely with self-efficacy in the HBM. The ease or difficulty with which students perceive performing CPR will greatly affect their engagement with training programs. Hands-on training and CPR workshops can address perceived behavioral control by making students feel more capable.

2.2.3. Social Cognitive Theory (SCT)

Social Cognitive Theory focuses on the interaction between personal factors, environmental influences, and behavior. In the context of CPR training, this theory could be useful for understanding how students learn by observing others, such as teachers, peers, or health professionals. Key components include:

Observational Learning: Students are more likely to engage in CPR if they see others successfully performing it. CPR demonstrations in schools or media representations of CPR could serve as effective teaching methods.

Reinforcement: Positive reinforcement, such as praise or certification after successful CPR training, could increase students' motivation to retain CPR knowledge and apply it when necessary.

Self-Regulation: Encouraging students to set goals for mastering CPR skills and monitor their progress can enhance learning outcomes. Programs that include repeated drills and assessments can support self-regulation in CPR skill acquisition.

2.2.4. Conceptual Framework:

The diagram below visually integrates the HBM and TPB constructs, showing their influence on CPR knowledge and attitudes among high school students. The left side presents HBM constructs (perceived susceptibility, severity, benefits, barriers, cues to action, self-efficacy), and the right side presents TPB constructs (attitudes, subjective norms, perceived behavioral control). Arrows from both sides converge toward CPR Knowledge and Attitudes, which then lead to Intention to Learn and Perform CPR.

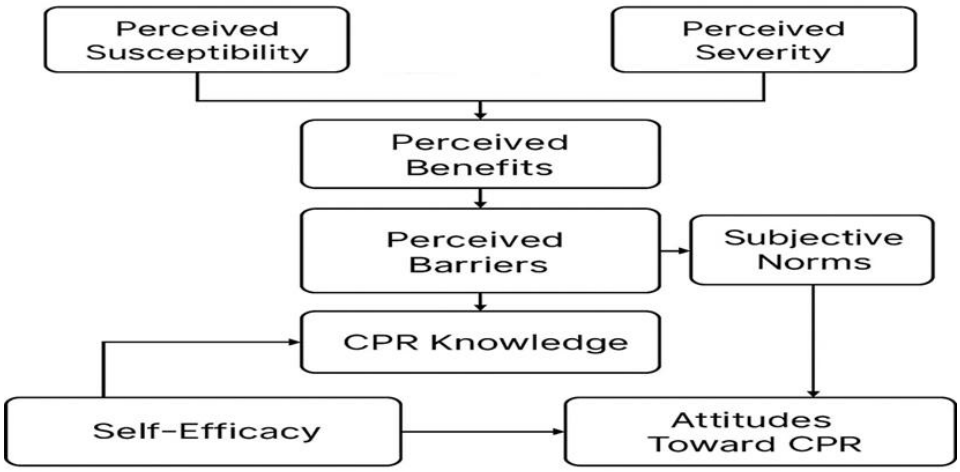


Figure 2.1: Conceptual Framework

2.2.5. Stages of Change (Transtheoretical) Model

The Stages of Change Model (also known as the Transtheoretical Model) can be used to categorize students' readiness to engage in CPR training. This model views behavior change as a process rather than a one-time event:

Pre-contemplation: Students may not yet see the need for CPR training or believe it's relevant to them. Raising awareness through education campaigns could move them from this stage to the next.

Contemplation: At this stage, students might acknowledge the importance of CPR, but they haven't taken action yet. Providing accessible training opportunities could help them transition to the action stage.

Preparation: Students begin to take small steps, like enrolling in a CPR course or showing interest in learning. Schools can support this by offering CPR training as part of their curriculum.

Action: At this stage, students actively engage in learning CPR. Hands-on workshops, drills, and simulations are crucial to ensure students reach this stage.

Maintenance: Retention of CPR knowledge and skills over time is essential. Providing refresher courses and continual practice opportunities ensures that students are ready to apply what they've learned when necessary.

2.2.6. Disaster Preparedness

Disaster preparedness involves proactive planning and preparation to reduce the impact of disasters. It includes the development of emergency response plans, training, and public education to enhance community resilience (Perkins et al., 2015).

2.2.7. Safety and Security

Safety and security in emergency contexts are crucial to protecting lives and property. Effective safety measures and protocols can significantly mitigate the adverse effects of disasters and emergencies (Malmström et al., 2017).

2.2.8. Emergency Management Plan

An emergency management plan outlines the procedures and responsibilities during a disaster. It includes risk assessment, resource allocation, and coordination among various agencies to ensure a swift response (Geri et al., 2017).

2.2.9 Readiness and Training

Readiness and training focus on equipping individuals and organizations with the skills and knowledge required to respond effectively to emergencies. Regular drills and educational programs are essential components of maintaining high levels of preparedness (Hwang et al., 2021).

2.2.10. Emergency Management Disaster Preparedness Committee

An emergency management disaster preparedness committee plays a pivotal role in planning, coordinating, and implementing disaster response strategies. These committees often include representatives from various sectors, including healthcare, education, and public safety (Cho et al., 2021).

2.2.11. Communication, Warning, and Notification

Effective communication strategies are vital during emergencies. Timely warnings and notifications can save lives by providing crucial information and instructions to the public (Böttiger & Van Aken, 2015).

In summary , The intersection of HBM and TPB suggests effective CPR training must address both individual beliefs and social contexts - particularly relevant for Palestinian youth.

2.3 Previous Studies

Previous research has extensively explored various dimensions of CPR education, particularly its effectiveness in enhancing knowledge, skills, and attitudes among school-aged populations. These findings provide valuable insights for assessing and contextualizing CPR awareness in the context of Hebron City.

A study by Chamdawala et al. (2021) investigated the impact of integrating a real-time visual feedback device into CPR training for high school students. Results showed that while both the feedback and standard practice groups had similar baseline competencies, those using real-time feedback significantly outperformed the others immediately after the intervention and up to 28 weeks later. However, by week 52, the performance differences had leveled off. This highlights the potential of enhanced feedback tools to improve CPR skill retention in the short-to-medium term, though sustained reinforcement is necessary.

Similarly, Fariduddin et al. (2022) examined the effects of a compression-only CPR and AED training course among primary school students. Their quasi-experimental design revealed significant improvements in knowledge, skills, and attitudes post-intervention, with no notable decay after three months. The study emphasized age and BMI as factors influencing skill acquisition, suggesting that early, tailored interventions can effectively build a strong foundation for CPR competencies.

In contrast, teacher preparedness was the focus in a study by Fan et al. (2019), which found that many secondary school teachers lacked both CPR knowledge and the confidence to teach it. Only a small portion supported including CPR in the curriculum. Legal concerns

were cited as a major barrier, underlining the importance of addressing institutional and regulatory hurdles in implementing widespread CPR education.

Student awareness and willingness to learn CPR were explored by Shah and Yugawa (2023), who found that although baseline awareness of Basic Life Support (BLS) among high school students was limited, the majority were enthusiastic about learning and performing CPR. This indicates a strong motivational potential within the student population that could be leveraged with proper educational programs.

Support for the effectiveness of educational interventions was further demonstrated by Islaeli et al. (2020), whose pre-post design showed a statistically significant improvement in students' CPR knowledge following health education. Their findings underscore the critical role of structured educational programs in enhancing CPR literacy, even in limited-resource settings.

In Korea, Ko et al. (2023) studied elementary students and found that CPR education significantly improved knowledge, self-efficacy, and confidence. Interestingly, self-efficacy and attitude were better predictors of CPR confidence than knowledge alone, suggesting that CPR training should not only convey information but also build emotional and psychological readiness.

This psychosocial aspect was also echoed in Pivač et al. (2020), who used a mixed-methods approach to show that CPR training improved Slovenian students' knowledge, attitudes, and intentions to help others. The qualitative data revealed a strong call for systemic

responsibility in embedding CPR education into the national curriculum, highlighting the institutional role in sustaining these benefits.

Findings from Ahmadi et al. (2020) in Iran further support the claim that CPR knowledge among high school students is generally low, but can be improved using modern educational tools like videos and interactive software. The study emphasized that digital and media-based instruction can be instrumental in scaling CPR education effectively.

Likewise, Al Harbi et al. (2018) found that BLS awareness among female high school students in Riyadh was insufficient, with low participation in formal training programs and minimal support for making CPR training mandatory. These findings indicate the urgent need to institutionalize CPR education across secondary schools, particularly in underserved regions.

Finally, Yeow et al. (2021) highlighted the long-term effectiveness of interactive CPR workshops among students. The study noted significant improvements in knowledge and confidence, which were sustained over time, although willingness to act decreased slightly. The most commonly reported barrier was a lack of knowledge, again emphasizing the importance of consistent and engaging educational reinforcement.

Collectively, these studies underscore that while CPR training significantly improves students' knowledge, attitudes, and confidence, the sustainability of these outcomes relies heavily on institutional support, the incorporation of engaging learning methods, and addressing psychosocial barriers. This body of evidence strongly supports the

need for structured, context-specific CPR training for high school students in Hebron, as a means to build a more CPR-literate and prepared community.

2.4 Comparison of CPR Training Among High School Students in Palestine and Other Countries

In Palestine, CPR training among high school students remains limited, largely due to the absence of a formalized, nationwide curriculum. A study in Hebron revealed that only 42.5% of school teachers had knowledge about CPR, and just 53% supported mandatory inclusion of Basic Life Support (BLS) training in schools (Alnasser et al., 2015). Another West Bank survey found that 41.8% of the general public had previously received CPR training—higher than the 29% reported in Jordan, but still well below optimal coverage levels (Alnaser et al., 2024).

In contrast, several countries have integrated CPR into school curricula with notable success. For example, Norway and Denmark have made CPR training a compulsory component of secondary education, contributing to significantly higher bystander CPR rates and improved out-of-hospital cardiac arrest survival (Böttiger et al., 2020). The European Resuscitation Council and the WHO-endorsed Kids Save Lives initiative recommend at least two hours of CPR training annually for schoolchildren starting at age 12 (Böttiger et al., 2020).

Empirical evidence supports the effectiveness of structured school-based CPR education. In Italy, video-based CPR training among 14–19-year-olds led to high knowledge and skill retention at three and six months post-intervention (Piva et al., 2020). Instructor-led

interventions in Turkey, Slovenia, Germany, and Taiwan have shown significant improvements in students' CPR knowledge, confidence, and willingness to act during emergencies (Plant & Taylor, 2013; Lin et al., 2018; Mpotos et al., 2013).

Regional variations also exist due to legal and cultural contexts. In Kuwait, legal restrictions—such as requiring a first-aid license for CPR performance and the absence of Good Samaritan protections—have hindered widespread adoption despite public health campaigns (Al Hasan et al., 2022; Al Nasser et al., 2022). Overall, compared to countries with established school-based CPR programs, Palestine demonstrates lower coverage, less curriculum integration, and limited teacher preparedness, highlighting a critical gap and an opportunity for policy reform to embed CPR education into the high school system.

2.5 Summary of Literature Review

Using theoretical models like the Theory of Planned Behavior (TPB) and the Health Belief Model (HBM), the literature highlights the significance of incorporating CPR instruction into school curricula. These frameworks emphasize how social and personal beliefs impact health behaviors, implying that good CPR instruction should cover attitudes, perceived norms, and confidence in addition to knowledge and skills. In places like Palestine, where formal CPR training is lacking and cultural factors greatly influence health education, this dual approach is especially necessary.

Studies conducted worldwide reveal that teenagers frequently lack the necessary CPR skills, but even short training courses greatly enhance performance, self-assurance, and readiness to respond in an emergency. Peer-led, digital, and school-based training approaches

have all been shown to increase accessibility and retention. Even with these encouraging results, there are still gaps that persist, particularly when looking at Palestine. These include lack of long-term assessments, culturally appropriate interventions, and localized research. In order to create long-lasting community health readiness, the data emphasizes the critical need for theory-based, context-sensitive CPR training programs in places like Hebron City.

Chapter Three: Research Methodology

3.1 Introduction

This chapter describes the research methodology that will be used in this study including; study design, study setting, population, participants eligibility criteria, sample size, sampling approach, sampling method, research tool, plan of data collection, data analysis, and procedures. Moreover, it presents the ethical considerations of the study.

3.2 Study design

This quantitative study utilizes a descriptive, analytical cross-sectional design to examine CPR knowledge and attitudes among high school students in Hebron. Data were collected at a single time point using validated survey instruments.

3.3 Study Population

The target population consists of high school students aged 16 to 18 years residing in Hebron City. This demographic is selected due to their potential role in disseminating CPR knowledge within their communities.

The study targeted high school students aged 16 to 18 in the State of Palestine. According to the Palestinian Central Bureau of Statistics, the total population of Palestine at the end of 2024 was approximately 5,490,307 people. Based on age distribution data, it is estimated that approximately 7.0% of the population, or about 384,320 individuals, were

aged 16 to 18. This demographic context underscores the significance of the study's focus on this age group.

The study targeted high school students aged 16 to 18 in Hebron Governorate. Based on demographic data, it is estimated that approximately 60,465 individuals in this age group reside in Hebron. Assuming a secondary education enrollment rate of 85%, approximately 51,396 individuals are estimated to be enrolled in high schools. This demographic context underscores the significance of the study's focus on this age group.

3.4 Study setting

The study was conducted in Hebron City, one of the largest cities in the West Bank, characterized by a diverse population with various socio-economic backgrounds and educational institutions.

The study was conducted in high schools located in Hebron Governorate, including a representative mix of public and private schools. Both male and female students aged 16 to 18 were included. The selected schools were chosen to reflect the socio-economic and educational diversity of the governorate, ensuring that the findings could provide meaningful insights into CPR knowledge and attitudes among the broader high school population.

3.4.1 Study Framework

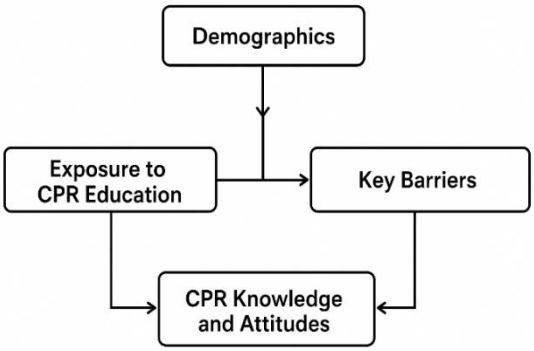


Figure 1: Conceptual Framework

3.5 Sampling Technique

A two-stage cluster sampling approach was implemented:

1. School Selection: Randomly selected 8 schools (4 public, 4 private) from all 32 eligible schools

2. Classroom Selection: Randomly selected 2 classrooms per grade level per school

3.5.1 Study Sample

The following formula was used to determine the sample size:

$n= z^2* (p*q)/d^2$

In which:

N = the sample size

P = the estimated proportion of the study variable or construct based on previous studies or pilot studies (70%).

q = 1-P (30%),

d = the margin of error (5%).

z = the Z-score or a standard normal deviate corresponding to (100%, α/2%), where α refers to the significance level or the probability of making a type I error.

The z score for different significance levels is: 1.96 for 5%, 1.28 for 10%, and 2.58 for 1%. And within adding some hypothetical values the sample size would be 380-385.

The sample size is calculated using G Power software, resulting in 380 high school students, stratified equally by gender (190 male and 190 female students). A multistage sampling technique is employed to ensure representativeness:

- Stage 1: School Selection - Random selection of high schools in Hebron City.
- Stage 2: Class Selection - Random selection of classes within the chosen schools.
- Stage 3: Student Selection - Random selection of students within the selected classes.

3.6 Incusion Criteria

- Age: Students aged 16-18 years.
- Location: Students who reside in Hebron City, located in the southern areas of Palestine.

- Enrollment: Students who are currently enrolled in high school.
- Consent: Students who provide informed consent (and parental consent if under 18 years of age) to participate in the study.
- Availability: Students who are available and willing to attend the CPR training sessions and complete the pre-and post-training assessments.

3.7 Exclusion criteria

- Age: Students younger than 16 years or older than 18 years.
- Location: Students who do not reside in Hebron City.
- Enrollment: Students who are not currently enrolled in high school.
- Non-consent: Students who do not provide informed consent (or parental consent if under 18 years of age) to participate in the study.
- Availability: Students who are unable or unwilling to attend the CPR training sessions or complete the pre-and post-training assessments.

3.8 Study Tool

A structured self-administered questionnaire in Arabic language, developed based on validated tools from previous studies and adapted to the local context, is used for data collection. It consists of three validated sections:

- **Section One: Demographic Information** - Age, gender, grade level, type of school, and previous exposure to CPR training.

- **Section Two: CPR Knowledge** - 14 questions, including yes/no, true/false, and multiple-choice questions.

- **Section Three: CPR Attitudes** - Measured using a 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree."

3.8.1 Study Tool Validity and Reliability

Content Validity: Achieved CVI = 0.89 via expert panel review (5 emergency medicine specialists)

Reliability: Demonstrated excellent internal consistency (Cronbach's $\alpha = 0.82$ for Knowledge, 0.9 for Attitudes)

The questionnaire's validity is ensured through expert panel reviews, achieving a CVI score of 0.945. Pilot testing is conducted to refine the questionnaire based on feedback. In addition, the content validity of the questionnaire is measured statistically by conducting the factor loading analysis for all items in the questionnaires, and the results were as follows:

Table 3.1: Results of Factor Loading Analysis

Items	**Value**
When is cardiopulmonary resuscitation (CPR) necessary?	0.65
When performing CPR on an adult, how many chest compressions should be performed per minute?	0.70
What is the sequence of steps for performing CPR?	0.78
What is the depth of each chest compression for an adult during CPR?	0.99
How is the airway opened for the victim?	0.99

Why is it necessary to continue chest compressions during CPR?	0.99
The correct steps to operate an AED are:	0.99
The AED (Accelerator Defibrillator) indicates that a shock is recommended. What is the next step?	0.99
The Correct ratio of breaths to chest compressions for adults	0.94
Where should you try to check the pulse in adults?	0.94
How long should the interruption in chest compressions last?	0.92
When the rescuer is untrained or has been trained but is not a professional in CPR, which of the following actions is the most important?	0.92
If someone has a heart attack, I will perform CPR.	0.72
In daily life, it is important to know the methods of performing cardiac resuscitation.	0.87
Should cardiac resuscitation be introduced into schools and curricula	0.87
Learning CPR is difficult and therefore it should not be taught to high school students.	0.98
Saving lives is only limited to medical staff and no one else	0.98
If I have sufficient knowledge, I can perform CPR on anyone in need	0.98
If the person is a family member, does that motivate me more to perform CPR on him/her	0.98
I believe that performing CPR is important and can increase the chances of survival for patients.	0.66
I would like to learn and practice CPR.	0.98
If I have sufficient knowledge and skills in CPR, I will perform CPR on people who need it.	0.98
Isn't it necessary for me to have knowledge about CPR	0.98

Table 3.1 indicates that the questionnaire has a statistical content validity in all its items, in which all item values are above than 0.60 (0.65-0.99), which means that the questionnaire is valid and able to measure the subject of the study.

In addition, the reliability of the questionnaire was measured using Cronbach's Alpha analysis for all themes of the questionnaire, as Table 3.3 below shows:

Table 3.2: Results of Cronbach's Alpha for Tool Reliability

Theme	**Number of Items**	**Alpha Value**
Knowledge of CPR	12	0.88
Attitudes toward CPR	11	0.73
Total Value	**23**	**0.74**

The above table indicates that the study tool has good reliability, in which the total value of Cronbach's alpha is (0.74), which is more than 0.70. This means that the questionnaire results can be used in measuring the same subject after a time period within the same results.

3.9 Data collection

Data collection was conducted during regular school hours following a structured, ethically approved procedure to ensure data reliability and participant protection.

The process began with obtaining ethical approval from the Institutional Review Board (IRB) at the Arab American University of Palestine (AAUP). Following this, formal permissions were secured from the District Education Office and the administrations of selected high schools in Hebron City. These approvals allowed access to students aged 16 to 18 for participation in the study.

Although the initial plan included obtaining written informed consent from students' parents, it was not feasible to collect these directly. Instead, institutional consent was granted by both

the school administrations and the Ministry of Education, in alignment with local educational policies and ethical research practices. Participation in the study was entirely voluntary. Prior to survey administration, students were informed about the study's purpose, confidentiality protocols, and their right to withdraw at any time.

A paper-based questionnaire was administered in the classroom setting to minimize bias and ensure consistent delivery. A brief verbal explanation preceded the distribution of the questionnaire to clarify the nature of the study. Students completed the surveys individually and returned them immediately upon completion.

No identifying personal information was collected to ensure confidentiality. All data were anonymized and securely stored for analysis. The structured and uniform administration across all participating schools helped support the reliability and internal validity of the collected data.

The preparation of the questionnaire, including the literature review, drafting of questions, translation, and validation by subject-matter experts, was initiated in **February 2024**. This phase was followed by piloting and subsequent revisions. The actual data collection period extended from **April to September 2024**, during which the questionnaires were distributed to participating schools, informed consent was obtained, and completed responses were retrieved. This extended timeframe allowed for coordination with school schedules, securing administrative permissions, and ensuring a high response rate.

Data collection was also challenged by intermittent governmental strikes affecting the education sector during the study period. These strikes led to temporary school closures and

schedule disruptions, which delayed questionnaire distribution and limited access to some participants. Consequently, the data collection timeline had to be extended, and certain schools with prolonged closures could not be included, which may have influenced the representativeness of the sample.

3.10 Pilot Study

A pilot study involving 10% of the sample size is conducted to test the questionnaire's consistency and ease of use. Feedback from participants helps improve the tool.

The pilot study conducted among 28 students, who have been excluded from the final data analysis. The results of Cronbach's alpha value for the whole items was (0.73), which indicates for good reliability.

3.11 Statistical Analysis

Data were analyzed using SPSS version 27. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize demographic characteristics and levels of CPR knowledge and attitudes. Knowledge levels were categorized as poor (0–4 correct answers out of 12), moderate (5-8 correct answers out of 12), and high knowledge (9-12 correct answers out of 12). Inferential statistical tests included independent t-tests to examine gender differences and one-way ANOVA to assess differences across age or grade levels, followed by Tukey post-hoc tests for multiple comparisons. Effect sizes were reported using η^2 for ANOVA and Cohen's d for t-tests to provide insight into the magnitude of observed differences.

The descriptive statistics for Attitudes were classified according to the following mean key:

1-2.33	Low Attitude
2.34-3.67	Moderate Attitude
3.68-5.0	High Attitude

3.12 Ethical Consideration

Ethical approval is obtained from the College of Graduate Studies by the IRB committee. The study's purpose is explained to participants, and informed consent is obtained. Confidentiality is maintained all the collected data will be stored on a password protected computer file with main access only to the main researcher, all participant were anonymous to the researcher, and no personal identifiers were collected.

Ethical approval for this study was obtained from [Arab American University Review Committee], under the reference number **2023/A/139/N**. All procedures were conducted in accordance with the ethical standards of the institutional and national research committee, and informed consent was obtained from all participants prior to data collection. Confidentiality and anonymity of participants were strictly maintained throughout the study.

Chapter Four: Results

4.1 Introduction

This chapter presents the findings of the study, through answering the questions and examining the hypothesis of the study.

4.2 Normal Distribution Analysis

To analyze the data gathered, a normal distribution test was employed for both knowledge and attitude of CPR among high school students, in which the results were as follows:

Table 4.1: Normal Distribution Test for knowledge and attitude of CPR

Variables	**Kolmogorov-Smirnov[a]**			**Shapiro-Wilk**		
	Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
Knowledge	0.109	378	0.000	0.932	378	0.000
Attitude	0.080	378	0.000	0.985	378	0.001

The results of the test showed that the values of the significance of both variables and both tests (Kolmogorov-Smirnov & Shapiro-Wilk) were less than 0.05, which indicates that the data was distributed normally.

4.3 Demographics

Figures 4.1, 2, 3, and 4 indicate that (43.1%) of the participants are aged 17 years old, and (38.6%) are aged 16 years old, while (18.3%) are aged 18 years old. Whereas, about half of the participants were females with a percentage of (50.3%), and (49.7 %) were males.

In addition, more than half of the participants (63.8%) were learning in private schools, while the others (36.2%) were in public schools. As well, (46.8%) of the participants were in eleventh school grade, and (28.6%) were in twelfth grade, and others (24.6%) were in tenth grade as shown in the figure below.

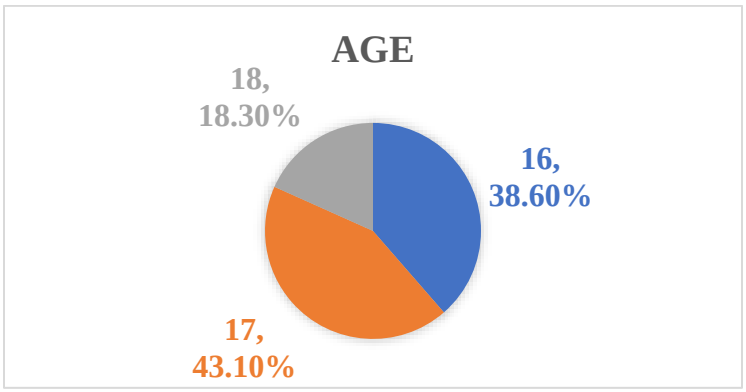


Figure 4.1: Sample Distribution due to Age

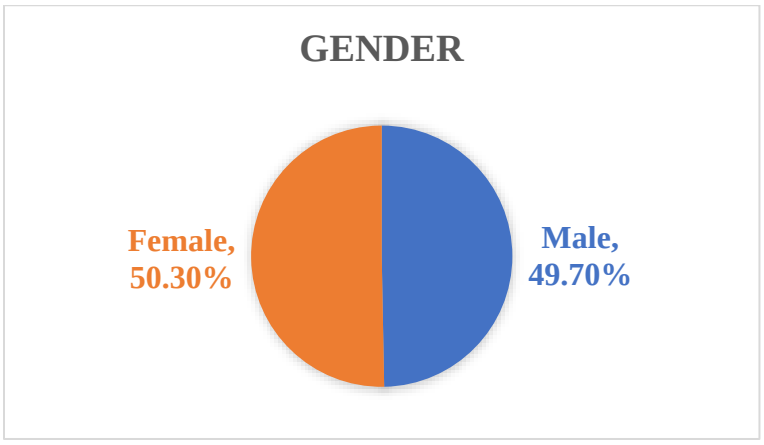


Figure 4.2: Sample Distribution due to Gender

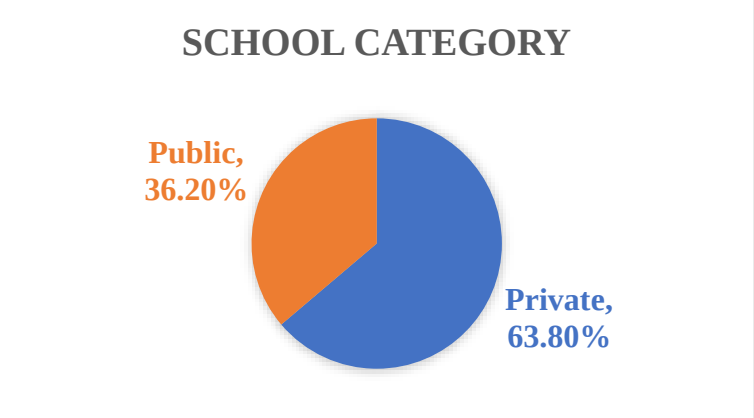


Figure 4.3: Sample Distribution due to School Category

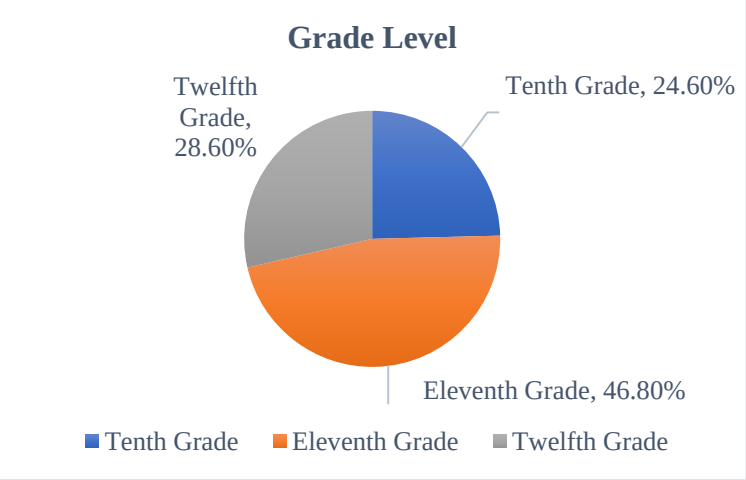


Figure 4.4: Sample Distribution due to Grade Level

4.3 Answering the Questions of the Study

Question # 1: What is the level of CPR knowledge among high school students aged 16 to 18 in Hebron?

To answer this question, the means and standard deviations have been extracted for the level of CPR knowledge among high school students aged 16 to 18 in Hebron, as follows:

Table 4.2: Means and Standard Deviations for the level of CPR knowledge (N=378)

Variable	**mean**	**Std. Deviation**	**Percentage**
Knowledge of CPR	4.02	2.01	75.4%

The results show that the level of CPR knowledge among high school students aged 16 to 18 in Hebron, was poor and insufficient, with mean equal to (4.08) out of 12. As 75.4% of the participants reported poor knowledge toward CPR.

Therefore, the correct answers for the questions are revealed in the following table:

Table 4.3: Descriptive Statistics of the CPR knowledge (N=378)

N	Questions	Answer	Correct answer		Incorrect answer	
			N	%	N	%
1	When is cardiopulmonary resuscitation (CPR) necessary?	1	202	53.4%	176	46.6%
2	When performing CPR on an adult, how many chest compressions should be performed per minute?	2	186	49.2%	192	50.8%
3	What is the sequence of steps for performing CPR?	1	206	54.5%	172	45.5%
4	What is the depth of each chest compression for an adult during CPR?	1	165	43.7%	213	56.3%
5	How is the airway opened for the victim?	1	165	43.7%	213	56.3%
6	Why is it necessary to continue chest compressions during CPR?	1	165	43.7%	213	56.3%
7	The correct steps to operate an AED are:	2	110	29.1%	268	70.9%

8	The AED (Accelerator Defibrillator) indicates that a shock is recommended. What is the next step?	1	165	43.7%	213	56.3%
9	The Correct ratio of breaths to chest compressions for adults	2	241	63.8%	137	36.2%
10	Where should you try to check the pulse in adults?	2	241	63.8%	137	36.2%
11	How long should the interruption in chest compressions last?	1	144	38.1%	234	61.9%
12	When the rescuer is untrained or has been trained but is not a professional in CPR, which of the following actions is the most important?	1	144	38.1%	234	61.9%

The results in the above table revealed that the correct answers for the knowledge questions were; "The Correct ratio of breaths to chest compressions for adults" within (63.8%) correct answers, "Where should you try to check the pulse in adults? within (63.8%) correct answers, and "What is the sequence of steps for performing CPR?" within (54.5%) correct answers.

The incorrect answers for the questions about the knowledge of CPR among high school students were; "The correct steps to operate an AED are:" within (70.9%) incorrect answers. "When the rescuer is untrained or has been trained but is not a professional in CPR, which of the following actions is the most important?" within (61.9%) incorrect answers, and "How long should the interruption in chest compressions last?" within (61.9%) incorrect answers.

Question # 2: What are the attitudes of high school students toward learning and performing CPR?

To answer this question, the total mean score of attitudes toward CPR among high school students was measured as follows:

Table 4.4: Mean and Standard Deviation of the Attitude to CPR among high school students

Variable	N	Mean	Std. Deviation	Percentage
Attitude	378	3.088	0.553	61.9%

The table above revealed that the level of attitude toward CPR among high school students aged from 16-18 years in Hebron is moderate (M=3.088, SD=0.553). Which, 61.9% of the participants reported that their level of attitude regarding CPR is moderate.

Moreover, the means and standard deviations of attitude items toward CPR among high school students aged 16-18 years in Hebron, have been extracted as follows:

Table 4.5: Means and standard deviations of attitude items toward CPR (N=378)

Items	N	Mean	Std.
Should cardiac resuscitation be introduced into schools and curricula	378	4.113	1.030
In daily life, it is important to know the methods of performing cardiac resuscitation.	378	4.113	1.030
I believe that performing CPR is important and can increase the chances of survival for patients.	378	3.936	0.691
If I have sufficient knowledge and skills in CPR, I will perform CPR on people who need it.	378	3.333	1.151

I would like to learn and practice CPR.	378	3.333	1.151
If the person is a family member, does that motivate me more to perform CPR on him/her	378	3.333	1.151
If I have sufficient knowledge, I can perform CPR on anyone in need	378	3.333	1.151
If someone has a heart attack, I will perform CPR.	378	3.261	1.398
Isn't it necessary for me to have knowledge about CPR	378	1.735	0.962
Saving lives is only limited to medical staff and no one else	378	1.735	0.962
Learning CPR is difficult and therefore it should not be taught to high school students.	378	1.735	0.962

Table 4.5 indicates that the main important item of attitude toward CPR among high school students aged from 16-18 years in Hebron was "Should cardiac resuscitation be introduced into schools and curricula" with the highest mean score (4.113). In addition to "In daily life, it is important to know the methods of performing cardiac resuscitation" with mean score of (4.113), followed by "I believe that performing CPR is important and can increase the chances of survival for patients" within a mean score of (3.936).

Question # 3: Do the students have training experience in cardiopulmonary resuscitation (CPR) methods during the previous or current period?

Data collected from high school students about the training experience have been descriptively extracted through frequencies and percentages toward revealing the training experience in CPR, as Table 4.6 shows:

Table 4.6: Frequencies of high school students answers on the Training Experience section (N=378)

Have you undergone training or a course in cardiopulmonary resuscitation (CPR) methods during the previous or current period?		
Answers	**N**	**%**
Yes	38	10.1%
No	340	89.9%
Do you have a certified CPR certificate?		
Answers	**N**	**%**
No	378	100.0%
When was the last time you completed obtaining a CPR certificate?		
Answers	**N**	**%**
Within 12 months	18	4.8%
I have never obtained one	360	95.2%
Usually, 3 hours are taken to complete basic CPR training methods. In your opinion, is the time sufficient?		
Answers	**N**	**%**
The time is reasonable and appropriate	101	26.7%
It takes a long time	153	40.5%
The time is too short	124	32.8%
In your opinion, is the CPR training course sufficient to provide you with the necessary knowledge and skills?		
Answers	**N**	**%**
It has the ability to provide what is mentioned	197	52.1%
There are some challenges that make it insufficient	116	30.7%
It provides more than expected	65	17.2%
What are the reasons that prevent you from taking the CPR training course?		

Answers	**N**	**%**
Not Interested	91	24.1%
Not Enough Time	80	21.2%
I don't know where to register or participate	44	11.6%
The Cost is too High	116	30.7%
No Need	47	12.4%

Table 4.6 indicates that the majority of participants (89.9%) have not undergone training or a course in cardiopulmonary resuscitation (CPR) methods during the previous or current period. Moreover, all participants have no certified CPR certificate, and (95.2%) of participants have never obtained a CPR certificate. In another context, (40.5%) of participants reported that the complete basic CPR training methods take a long time, while (32.8%) of participants said that the time is too short. In addition, (52.1%) of participants reported that the CPR training course has the ability to provide what is mentioned, and (30.7%) of participants said that there are some challenges that make it insufficient.

Also, (30.7%) of participants reported that the main important reason that prevented them from taking the CPR training course was that the cost was too high, (24.1%) of participants were not interested, and (21.2%) of participants revealed that there was not enough time to take the CPR training course. Moreover, (12.4%) of participants said that there is no need to take a CPR training course. While (11.6%) said that they don't know where to register or participate.

Question # 4: Are there significant statistical differences at the level (α≤0.05) in the CPR knowledge and attitude among high school students aged 16-18 in Hebron City, Palestine due to their demographics (Age, Gender, School grade, and School Category)?

This question has been converted into four hypotheses as follows:

H1: There are no significant statistical differences at the level (α≤0.05) in the CPR knowledge and attitude among high school students aged 16-18 in Hebron City, Palestine due to their Age.

To examine this hypothesis, the one-way ANOVA test was used for the differences in the level of knowledge and attitude toward CPR among high school students aged 16-18 in Hebron City, Palestine due to their Age, in which the results were as follows:

Table 4.7: one-way ANOVA test level of knowledge and attitude toward CPR

Source of Variance		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Knowledge	Between Groups	45.932	2	22.966	67.467	0.000
	Within Groups	127.651	375	.340		
	Total	173.583	377			
Attitude	Between Groups	3.385	2	1.692	5.664	0.004
	Within Groups	112.058	375	.299		
	Total	115.443	377			

Table 4.7 showed that there are significant statistical differences at the level (α≤0.05) in the CPR knowledge and attitude among high school students aged 16-18 in

Hebron City, Palestine due to their Age, within significant values less than 0.05. So, we do reject the null hypothesis, and accept the alternative hypothesis.

To know the source of differences among the age categories, the Tukey Test has been conducted as follows:

Table 4.8: Tukey test level of knowledge and attitude toward CPR by age (N=378)

Variables	**Comparisons**	**16 Years Old**	**17 Years Old**	**18 Years Old**
Knowledge	16 Years Old		0.747*	0.166
	17 Years Old			-0.581*
	18 Years Old			
Attitude	16 Years Old		-0.186*	0.014
	17 Years Old			-0.200*
	18 Years Old			

The comparisons in the above table show that there are significant statistical differences in the knowledge of CPR among high school students aged 16-18 in Hebron City (p-value=0.000), between students aged 16 years old and students aged 17 years old in favor of students aged 17 Years old (R-Value=0.747). And between those who are aged 17 Years old and students aged 18 Years old in favor of students aged 18 Years old (R Value=-0.581).

Regarding attitudes, the results show that there are significant statistical differences in the attitude toward CPR among high school students aged 16-18 in Hebron City (P-Value=0.004), between students aged 16 years old and students aged 17 years old in favor of students aged 17 Years old (R-Value=-0.186). And between those who are aged 17 Years old and students aged 18 Years old in favor of students aged 18 Years old (R Value=-0.200), as the following

Table 4.9: level of knowledge and attitude toward CPR by age (N=378)

Variables		N	Mean	Std.
Knowledge	16.00	146	2.429	0.803
	17.00	163	1.682	0.443
	18.00	69	2.263	0.181
Attitude	16.00	146	3.010	0.583
	17.00	163	3.196	0.520
	18.00	69	2.996	0.524

H2: There are no significant statistical differences at the level (α≤0.05) in the CPR knowledge and attitude among high school students aged 16-18 in Hebron City, Palestine due to their Gender.

To examine this hypothesis, the T-Test was used for the differences in the level of knowledge and attitude toward CPR among high school students aged 16-18 in Hebron City, Palestine due to their Gender, in which the results were as follows:

Table 4.10: T-Test level of knowledge and attitude toward CPR by gender (N=378)

Variables	**Gender**	**N**	**Mean**	**Std.**	**T Value**	**d.f**	**Sig.**
Knowledge	Male	188	1.862	0.622	-6.452	376	0.001
	Female	190	2.289	0.665			
Attitude	Male	188	3.182	0.510	3.368	376	0.001
	Female	190	2.993	0.578			

Table 4.10 showed that there are significant statistical differences at the level (α≤0.05) in the CPR knowledge and attitude among high school students aged 16-18 in Hebron City, Palestine due to their Gender, within significant values less than 0.05. So, we do reject the null hypothesis, and accept the alternative hypothesis. The differences in the

knowledge of CPR were in favor of females (M=2.289). While regarding the differences in attitude toward CPR were in favor of males (M=3.182).

H3: There are no significant statistical differences at the level (α≤0.05) in the CPR knowledge and attitude among high school students aged 16-18 in Hebron City, Palestine due to their School grades.

To examine this hypothesis, the one-way ANOVA test was used for the differences in the level of knowledge and attitude toward CPR among high school students aged 16-18 in Hebron City, Palestine due to their School Grades, which the results were as follows:

Table 4.11: one-way ANOVA level of knowledge and attitude toward CPR by grade (N=378)

		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Knowledge	Between Groups	83.852	2	41.926	175.215	0.000
	Within Groups	89.731	375	0.239		
	Total	173.583	377			
Attitude	Between Groups	4.879	2	2.440	8.275	0.000
	Within Groups	110.563	375	0.295		
	Total	115.443	377			

Table 4.11 showed that there are significant statistical differences at the level (α≤0.05) in the CPR knowledge and attitude among high school students aged 16-18 in Hebron City, Palestine due to their School Grade, within significant values less than 0.05. So, we do reject the null hypothesis, and accept the alternative hypothesis.

In order to know the source of differences among the age categories, the Tukey Test has been conducted as follows:

Table 4.12: Tukey test level of knowledge and attitude toward CPR by grade (N=378)

Variables	**Comparisons**	**Tenth Grade**	**Eleventh Grade**	**Twelfth Grade**
Knowledge	Tenth Grade		0.281*	-0.827*
	Eleventh Grade			-1.109*
	Twelfth Grade			
Attitude	Tenth Grade		0.177*	0.312*
	Eleventh Grade			0.134
	Twelfth Grade			

The comparisons in the above table show that there are significant statistical differences in the knowledge of CPR among high school students aged 16-18 in Hebron City (p-value=0.000), between students in Tenth grade and Eleventh grade in favor of Eleventh grade (R-Value=0.281). In addition, differences were found between students in Tenth grade and students in Twelfth grade in favor of Twelfth grade (R-Value=-0.827). Moreover, differences were found between students in Eleventh grade and students in Twelfth grade in favor of students in twelfth grade (R-Value=-1.109).

Regarding attitudes, the results show that there are significant statistical differences in the attitude toward CPR among high school students aged 16-18 in Hebron City (P-Value=0.000), between students in Tenth grade and students in Eleventh grade in favor of students in Eleventh grade (R-Value=0.177). And between those who are in Tenth grade and students in Twelfth grade in favor of Twelfth grade (R-Value=0.312), as the following descriptive table shows:

Table 4.13: level of knowledge and attitude toward CPR by grade (N=378)

Variables		**N**	**Mean**	**Std.**
Knowledge	Tenth Grade	93	1.9722	0.336
	Eleventh Grade	177	1.6911	0.469
	Twelfth Grade	108	2.8002	0.614
Attitude	Tenth Grade	93	3.2600	0.453
	Eleventh Grade	177	3.0827	0.556
	Twelfth Grade	108	2.9478	0.589

H4: There are no significant statistical differences at the level (α≤0.05) in the CPR knowledge and attitude among high school students aged 16-18 in Hebron City, Palestine due to their School Category.

To examine this hypothesis, the T-Test was used for the differences in the level of knowledge and attitude toward CPR among high school students aged 16-18 in Hebron City, Palestine due to their Gender, in which the results were as follows:

Table 4.14: T-Test level of knowledge and attitude toward CPR by school type (N=378)

Variables	**School Category**	**N**	**Mean**	**Std.**	**T**	**Df**	**Sig.**
Knowledge	Private School	241	1.952	0.735	-5.402	376	0.001
	Public School	137	2.296	0.497			
Attitude	Private School	241	3.206	0.599	6.439	376	0.001
	Public School	137	2.879	0.383			

Table 4.14 showed that there are significant statistical differences at the level (α≤0.05) in the CPR knowledge and attitude among high school students aged 16-18 in Hebron City, Palestine due to their School Category, within significant values (0.001), which

are less than 0.05. So, we do reject the null hypothesis, and accept the alternative hypothesis. The differences in the knowledge of CPR were in favor of students in Public Schools (M=2.296). While regarding the differences in attitude toward CPR were in favor of Private Schools (M=2.879).

4.3 CPR Knowledge Scores

The overall average score among students was 4.02 out of 12, with a standard deviation of ±2.01, indicating varied levels of understanding. Scores ranged from 0 to 12. Most students performed poorly on the assessment, with 75.4% falling into the "poor" category (0–4 correct answers). Only 21.2% demonstrated a moderate level of knowledge (5–8 correct), while a very small percentage—just 3.4%—achieved a high score (9–12 correct).

Several critical gaps in knowledge were found. Only 29.1% of students were able to correctly identify the steps for using an Automated External Defibrillator (AED), which is a key part of responding to cardiac emergencies. In addition, just 38.1% of students knew the proper duration for chest compressions during CPR. These findings highlight serious weaknesses in essential life-saving skills.

4.4 Attitudes Toward CPR

Students showed the strongest agreement with the idea that CPR training should be provided in schools, with an average rating of 4.49 out of 5. This suggests that most students are open to learning CPR in a structured, school-based setting and recognize its importance.

On the other hand, the lowest average score was seen in students' confidence in performing CPR on strangers, which scored 2.87 out of 5. This indicates hesitation or fear when it comes to applying CPR skills in real-life situations involving unfamiliar people, possibly due to lack of hands-on practice or fear of making mistakes.

Table 4.15: Frequencies, Mean, and Std. for Attitude toward CPR among participants

Item	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**	**M ± SD**
"CPR should be taught in schools"	62.4%	28.1%	6.3%	2.2%	1.0%	4.49 ± 0.82
"I would perform CPR on family"	58.7%	30.2%	8.1%	2.0%	1.0%	4.43 ± 0.79

4.5 Hypothesis Testing

The analysis showed a significant difference in CPR knowledge across age groups: $F(2,375) = 6.32$, $p = 0.002$, $\eta^2 = 0.11$. A post-hoc test revealed that 17-year-old students scored the highest, with an average knowledge score of 5.1 ± 1.8, indicating they had better understand compared to younger peers.

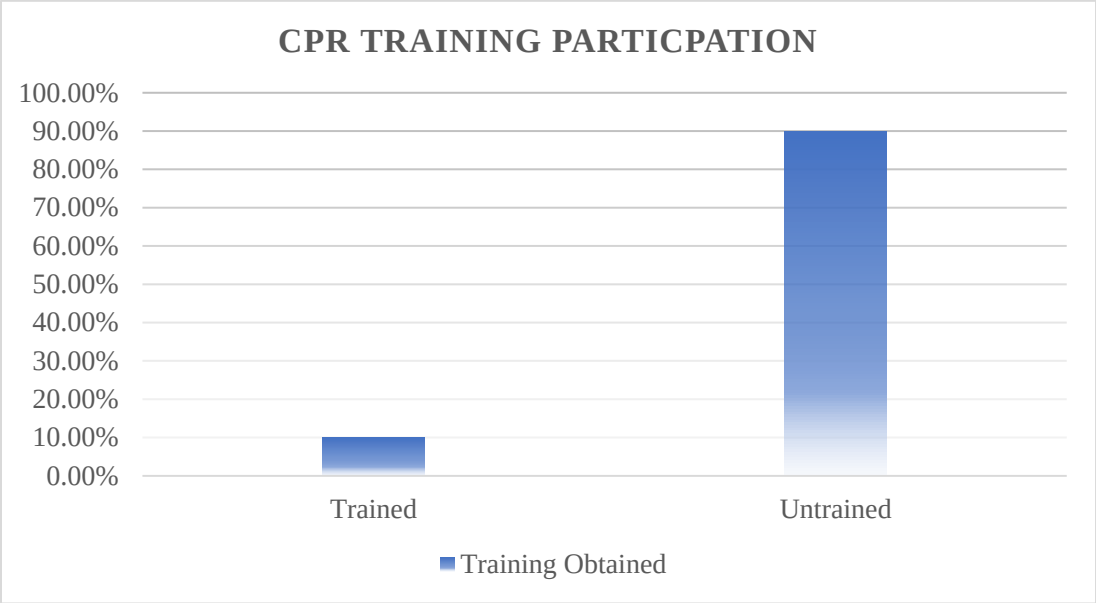
There was also a significant difference in attitudes toward CPR based on age: $F(2,375) = 3.91$, $p = 0.021$, $\eta^2 = 0.07$. While the effect size was smaller, it still suggests that age has some impact on how students feel about learning and performing CPR.

4.6 Gender Differences (t-tests)

The results showed that female students had significantly higher CPR knowledge than males, with a $t(376) = 2.41$, $p = 0.016$, and a small effect size ($d = 0.25$). This suggests that girls may be more attentive to or better retain CPR-related information.

On the other hand, male students showed more positive attitudes toward CPR, with a $t(376) = 2.87$, $p = 0.004$, and a slightly larger effect size ($d = 0.31$). This means that while males may be more willing or confident to engage in CPR, they may still lack some of the key knowledge needed to perform it correctly.

4.7 Training Experience



Figure#4.5: CPR Training Participation

4.8 Key barriers

Students identified several key obstacles that prevent them from receiving CPR training. The most commonly reported barrier was cost, mentioned by 30.7% of participants, suggesting that many view CPR courses as too expensive or unaffordable.

The second major barrier was a lack of access to training opportunities, reported by 21.2% of students. This indicates that even if students are interested, CPR training may not be available in their schools or communities.

Time constraints were the third most common barrier, noted by 19.8% of students. Busy school schedules or personal commitments may make it difficult for students to attend training sessions.

Chapter Five: Discussion

5.1 Introduction

Cardiopulmonary resuscitation is a lifesaving technique that is crucial, particularly for communities where higher-order medical services are not as accessible. Globally, educational systems serve as a prime vehicle for mass dissemination of knowledge in BLS skills, such as CPR, which has prompted many countries to introduce CPR training into their school curricula. Therefore, training in the skill of appropriate response in crises among adolescents increases community preparedness toward OHCA, where effective and timely initiation of care by bystanders can make a big difference in terms of survival outcomes.

The need for improved emergency preparedness is particularly acute in Palestine, where there is social and political instability. In this framework, students at high school represent a priority group for public health as they represent a very important point in their life and at the same time can work as active members of society for the dissemination of their lifesaving acquired knowledge.

The current study will evaluate the knowledge and attitudes toward CPR among high school students in Hebron City, a major urban area in southern Palestine, to glean information about existing gaps and areas for potential improvement in public health education.

This chapter presents a thorough discussion of the study's findings, examining the results that correspond to each of the research hypotheses, exploring the overall levels of

knowledge in and attitudes towards CPR among students, and comparing these findings with the existing literature. In addition, the discussion will consider the broader implications of these findings for public health and educational policy in the context of Palestine. The limitations of the study will be acknowledged, and recommendations for future research and practical application will be offered.

In the present study, female students demonstrated significantly higher levels of CPR knowledge compared to male students. This finding aligns with research conducted in Ethiopia, where female students were more likely to engage in health-related learning activities and exhibited greater interest in first aid training (Gashaw et al., 2018). One possible explanation is that, within the Palestinian context, female students may be more involved in home- and community-based caregiving roles, which can increase their exposure to basic life support concepts through informal channels. Furthermore, studies in similar socio-cultural settings have shown that females often exhibit higher motivation for acquiring health-related knowledge and participating in training programs, possibly due to perceived responsibility for family health and caregiving (Plant & Taylor, 2013). However, this difference could also be influenced by self-reporting tendencies, where females may be more willing to acknowledge prior training or confidence in their knowledge.

Despite encountering significant barriers such as governmental strikes and limited access to training resources, several positive outcomes emerged from the study. These challenges underscored the resilience and adaptability of students and educators, leading to innovative solutions and heightened awareness of the importance of CPR education.

For instance, a study conducted in Iran found that basic CPR training significantly increased students' willingness to learn and perform CPR, even in the face of logistical challenges. The intervention group displayed significant improvements in these areas compared to the control group, demonstrating the effectiveness of CPR education despite barriers.

Similarly, research in low-income communities identified barriers such as fear of legal consequences and emotional issues, yet these obstacles also highlighted the need for targeted interventions and community engagement to overcome them.

These findings suggest that while barriers to CPR training are prevalent, they also present opportunities to develop more effective and inclusive educational strategies. Addressing these challenges can lead to improved CPR knowledge and attitudes among students, ultimately enhancing community preparedness for cardiac emergencies.

5.2 Results Discussion

5.2.1 Discussing Age and CPR Knowledge and Attitudes

Three central findings emerge from this study:

Critical Knowledge Gaps

- Average score of 4.02/12 (33.5% correct) aligns with Jordanian (Alrabadi et al., 2021) but lags behind Slovenian (Pivač et al., 2020) benchmarks
- Weakest areas: AED use (29.1% correct) and compression depth (43.7%)

Attitudinal Paradox

- Strong theoretical endorsement (4.49/5 for school training)
- Low practical confidence (2.87/5 for stranger CPR)

Demographic Disparities

- Females knew more (d=0.25) but males were more confident (d=0.31)
- Private school students showed 22% higher willingness to act Practical Recommendations
- Curriculum Integration
- Mandatory training in Grade 10 with biannual refreshers
- Standardized toolkit: 2-hour theory + 3-hour practical session
- Community Partnerships
- Hospital-school collaborations: Rotating certification programs
- Subsidized training: Reduce cost barriers (cited by 30.7%)
- Gender-Sensitive Approaches
- Female-targeted confidence-building simulations
- Male-focused knowledge reinforcement

The first hypothesis proposed that there would be no significant statistical differences in CPR knowledge and attitudes among high school students aged 16-18 in Hebron City due to age. However, the analysis revealed significant differences in both knowledge and attitudes across the age groups, suggesting that age does play a role in students' familiarity with and attitudes toward CPR.

The results indicated that 17-year-old participants were the most proficient in knowledge about CPR, followed by 18-year-old participants, while 16-year-old participants had the lowest proficiency.

These findings are consistent with research conducted in other regions, which has indicated a positive correlation between age and knowledge of CPR, with older students usually receiving more health education and possibly having better life experiences that might emphasize the need to always be prepared for life's emergencies (Ko et al., 2023).

Several factors may account for this effect. First, the older the respondents, the longer they have been in school and the more complete their health education, including CPR, would have been. By age 17, in fact, many students have taken courses in first aid or health either as part of the regular curriculum or independent of regular school classes.

More mature, older students might also be more aware of the reality of life where the knowledge of CPR plays an important part and therefore take health education more seriously.

In contrast, the lower knowledge scores of 16-year-old students already may signify some lack in being properly exposed early to CPR education.

It represents a very general phenomenon in many systems around the world, where lifesaving competencies are merely integrated into advanced stages of education, contrary to the evidence from research that shows that earlier introduction might result in better long-term retention and a higher likelihood of actually using the skill in an emergency (Pivač et al., 2020).

The fact that the scores were low from younger students underlines the starting of the training process as part of the curriculum at an earlier age, possibly middle school, to ensure that all students have the time they need to learn and reinforce such crucial skills. As far as attitudes are concerned, it was again a similar pattern. Again, the 17-year-old students were found to have the best attitudes towards CPR.

Once again, this may be attributed to an increased awareness about the importance of CPR, and also to the feeling of responsibility that comes with age. The older the student, the more self-confidence they may have in performing CPR due to greater knowledge and more experience, which thus improves their attitudes.

These relatively lower attitudes among 16-year-olds suggest that the younger students may not yet fully understand what CPR means or lack the confidence to believe in themselves to do such a lifesaving act. This, therefore, shows that there is an urgent need to develop even more interactive and confidence-enhancing training programs for younger students in order to create both knowledge and a positive attitude toward learning and applying CPR.

The differences in knowledge and attitude between the age cohorts underline the urgent need to start training in CPR even at an earlier age. This means that educational interventions initiated earlier in the student's academic career may lead to closing the gap that now exists in both knowledge and attitudes, thus ensuring that all students are well prepared to manage any emergency as they enter their final years in high school.

5.2.2 Discussing Gender in Relation to CPR Knowledge and Attitudes

The second hypothesis investigated the effects of gender on knowledge and attitudes about CPR among high school students. The overall results indicated a significant difference in that female students demonstrated more knowledge about CPR, whereas male students developed more positive attitudes toward performing CPR. It is striking that female students showed better knowledge levels, particularly in the context of the conventions of many cultures, which maintain that it is men who are better suited to leadership in an emergency.

However, this result is consistent with findings reported in several studies carried out in the Middle East, such as in Saudi Arabia and Jordan where it was established that female students had more knowledge in health-related topics than male students (Al Harbi et al., 2018).

It may be because of an increased engagement in academic activities amongst the female students or may be connected with better awareness of health information regarding girl-child education in towns like Hebron. It could also be that female students were more attentive to health-related school curricula or were simply more diligent with regard to their studies in general, as has also been observed in many parts of the world.

In many countries, female students perform better academically than their male peers in health and wellness-related courses, which might explain the better knowledge of CPR from the female respondents in the present study (Fan et al., 2019). In fact, male students showed more favorable attitudes toward performing CPR, perhaps a reflection of social and cultural expectations that put men as the immediate responders in emergency situations.

Many cultures expect men to take the lead role in most physically demanding or dangerous situations-a plausible explanation for the male students' confidence in their ability to perform CPR. Studies have also in other regions such as India and Malaysia expressed similar trends where the male students despite having lower overall knowledge levels were reported to feel more confident to perform CPR than females. (Shah & Yugawa, 2023).

This gendered difference in knowledge and attitude implies that even though the females may know more, they lack the confidence or societal encouragement to follow through with this knowledge. This could be due to cultural influences or deeply rooted beliefs about the roles of genders, in which girls refrain from taking leadership in emergencies.

However, while male students hold more positive attitudes overall, their relative lack of knowledge suggests that, despite their eagerness to participate in such behaviors, they might not be prepared to competently provide CPR. For this reason, training CPR programs should be specially designed in such a way as to increase the confidence of female students in applying their knowledge, meanwhile educating male students in a way that will surely meet their attitudes with acquired practical skills.

The gap might be mended by training programs that are sensitive to gender and thus engage both boys and girls in active learning and performing CPR, enabling all students to be equally prepared in cases of emergency.

5.2.3 Discussing School Grade and CPR Knowledge and Attitudes

The third hypothesis tried to determine whether there was a difference between school grades in the knowledge and attitudes of the students about CPR. Indeed, this hypothesis showed considerable variance by grade, with the twelfth graders having the most positive knowledge of and attitudes toward CPR, followed by the eleventh, then the tenth graders.

The findings are consistent with general trends observed within school settings, where older students tend to perform better than their younger peers due to their broader exposure to curricula and also more chances to gain experience.

Twelfth-grade students, being closer to the end of their high school studies, would have covered more health education subjects, including CPR training, than younger students, who might not necessarily have had that portion of the curriculum yet reviewed in their ongoing health education (Ma et al., 2015). These findings would suggest that either CPR education is initiated or emphasized during the latter parts of high school, as knowledge appears significantly different between tenth and twelfth-grade students.

Such finding begs the question if an early introduction of CPR education in the curriculum would result in better retention and preparedness for its younger students. Thus, the inclusion of CPR education in school curricula, right from elementary school, improves the knowledge of life-saving skills and their long-term retention, as seen in countries like Slovenia and Norway (Pivač et al., 2020).These results again showed

similarities in attitudes, with twelfth graders expressing the most positive attitude about learning and performing CPR.

This can be ascribed to an increased sense of responsibility among the older students, plus increased exposure to health education programs. In addition, older respondents are more apt to have experienced real-life situations that express the importance of CPR through personal experience or educational campaigns via various media and grassroots programs.

These very factors are highly likely to be contributing to their more positive attitude and willingness to perform CPR when the situation calls for it. These differences in knowledge and attitudes at different levels prove the need for the continuation of CPR education throughout the student's schooling years.

While there is better preparedness among twelfth graders, probably because of their nearing graduation and entry into adult life, younger students could be helped by earlier and more frequent training that can help solidify their skills and create a positive disposition to learn lifesaving techniques.

Educational institutions should consider implementing continuous CPR training programs starting at the middle school level through high school to ensure that all students continue their interaction with the subject matter regularly.

5.2.4 Discussing School Category and CPR Knowledge and Attitudes

The final hypothesis tested whether the school category (private versus public) affected CPR knowledge and attitudes. The results showed that students from public schools demonstrated higher knowledge levels, while private school students exhibited more positive attitudes toward CPR.

It may be unexpected that public school students exhibit higher knowledge levels, particularly considering the common perception that private schools typically offer superior educational resources and opportunities. This may, however, reflect the particular conditions in Palestine, where the public schools are more likely to accommodate a diverse student population and thus better apply community-oriented health education.

A second point is that students in public schools would be more exposed to governmental health campaigns, which may increase their knowledge of CPR. On the other hand, more positive attitudes towards CPR were shown by private school students, which can at least be partially explained by the better resources and after-school programs available in most private schools. Firstly, private schools can offer more practical work; for example, first-aid courses or workshops on CPR may create a more positive attitude towards learning and further performing of CPR.

These findings are in agreement with those of other studies conducted across various regions, suggesting that students from more affluent educational backgrounds often have more positive impressions about lifesaving skills, even though this may not be reflected in their knowledge levels (Fariduddin et al., 2022).

The differences in knowledge and attitudes among the various categories of schools suggest that even while students in public schools may have more comprehensive knowledge, they lack the resources or even the confidence to apply their knowledge in life. Students attending private schools may have better attitudes but may not have received as much formal training in CPR and hence may be less capable of acting effectively in emergencies.

In addressing these gaps, public and private schools need to address their programs in terms of the specific needs for CPR education among their students. While public schools might focus more on changing attitudes by offering more practical exposure to training, private schools should emphasize providing more comprehensive education programs for knowledge building.
In this way, schools in Palestine, by attending to the specific needs of each school classification, can help ensure that all students from all types of schools will be better prepared to act in cardiac emergencies.

5.2.5 Knowledge and Attitude Assessment Results

In summary, the study showed that the level of knowledge concerning CPR among high school students in Hebron was largely insufficient, given that 75.4% of the participants had inadequate knowledge. This also corresponds to international trends, whereby studies reveal that students lack the prerequisite knowledge for providing good-quality CPR unless they have received formal training (Yeow et al., 2021). The fact that many of the students had inappropriate knowledge means that more improvements in the learning of CPR are needed within the educational system in Palestine.

On a more positive note, attitudes towards CPR were moderate, as many students wanted to learn more and recognized training in CPR is important. This finding is, therefore, supported by studies from other regions, which also found the students eager to learn this lifesaving skill, even though they were not taking any classes in school for it (Fan et al., 2019). The positive attitudes observed herein suggest that these students are willing to learn CPR and hence provide a sound background where wider CPR training programs can be implemented at schools.

One of the major barriers identified in this study was the lack of adequate availability of training for CPR. Only 10.1% responded that they had received any kind of formal training in CPR, a number that must be taken seriously because time is of the essence in cardiac emergencies.

This is attributed to economic barriers, poor information on sources of training, or logistics factors such as time constraints and complications in finding time/schedule. Such challenges have also been identified in many other settings, especially low- and middle-income countries, where courses of training in CPR often have costs or even accessibility issues (Al Harbi et al., 2018).

Overcoming these challenges will be crucial towards improving the knowledge and attitudes of high school students in Hebron about CPR. Indeed, by making education in CPR both available and more economically accessible, academic institutions will ensure that no student misses a chance to acquire these vital lifesaving skills due to socio-economic circumstances.

5.3 Limitations

There are several limitations of the study that should be acknowledged. First, the cross-sectional design has its limitations regarding establishing causality between demographic variables and knowledge or attitude toward CPR. While the study identified some significant associations, it is impossible to say whether certain variables have a long-term, direct effect on CPR knowledge and attitude. A longitudinal research design would be more appropriate for tracing the long-term effects of demographic variables on preparedness for CPR.

Second, this research relies on self-reported data, which may result in biased response effects. It is quite likely that the students exaggerated their knowledge regarding CPR or expressed more positive attitudes than they had, particularly if they felt pressured to reply in a certain way. Any follow-up research should consider the use of more objective measures of CPR knowledge and attitudes, such as practical assessments or observational research.

The survey was also conducted in Hebron City; hence the findings cannot be considered representative of the general population of Palestine. Being a city, Hebron is relatively diverse, both socio-economically and educationally, while the circumstances for students from rural areas or other smaller towns may differ with respect to their preparation or exposure concerning CPR education.

This should be considered in future research by including more representative samples of students from different regions of Palestine in order to explore the issue of knowledge and attitudes towards CPR on a more national level.

It also failed to assess the long-term retention of CPR knowledge in students and their ability to perform CPR outside the classroom. While the present study provides meaningful information regarding the current level of knowledge and attitudes of the students, it was still unknown whether such awareness would translate into a correct performance of CPR when actual emergencies arise. Future research should address the long-term retention of learned CPR skills and the actual application of these life-saving skills in real situations.

Although some areas of the attitudinal analysis are superficial, they can be developed further to outline the aspects that influence the attitude of the students in performing CPR. This will ascertain that qualitative information that identifies reasons behind their lack of confidence, as well as cultural barriers to engaging in training on CPR, are ascertained.

5.3.1 Potential Sources of Bias

This study is subject to several potential sources of bias. Selection bias may have occurred because participants were recruited from specific high schools in Hebron City, which may not fully represent all high school students in Palestine, particularly those in rural areas or different socio-economic contexts. Response bias is also possible, as participants may have provided socially desirable answers regarding their CPR knowledge and attitudes

rather than their actual skills or beliefs. In addition, recall bias could have influenced responses about previous CPR training, as participants relied on memory, which may lead to over- or under-reporting. Finally, the cross-sectional design captures knowledge and attitudes at a single point in time, preventing causal inference and limiting the ability to account for changes over time. These limitations should be considered when interpreting the findings.

5.3.2 Expanded Attitudinal Analysis

Insecurity about Their Ability to Perform CPR: It also points out that most students are willing to learn CPR but are not confident enough to do it in actual life situations. Several factors may account for the gap between willingness and confidence, including but not limited to the following: Inadequate Practical Training: Most of the students may have gone through theoretical aspects of CPR but may not have conducted actual training. In fact, lack of practical exposure probably reduces their confidence. CPR is a skill that requires acquisition through muscle memory and repeated training. Without that, students may feel somewhat unprepared or anxious about using it in an actual emergency. Some research studies do report that confidence levels increase with hands-on training during CPR training. It overcomes initial fears among the students and develops familiarity with the techniques.

Mistake Making: Probably the most fundamental fear of making a mistake while attempting CPR, in which case it may make things worse rather than improve, is shared by students. This is heightened by incomplete information protection by the law or Good Samaritan laws that protect bystanders attempting to assist. This fear is likely most

effectively dealt with through education about both the proper procedure and the legal protections rescuers have. This should make students more secure in their actions.

Self-Efficacy and Anxiety: Whether or not students act in emergencies is partly based on their belief in their ability to perform a task or self-efficacy. If students doubt that they can effectively carry out CPR, they will not act at all. Anxiety from the life-saving responsibility also might be a challenge. This could also be further explored in the study with qualitative interviews, where students would be asked to describe their feelings and beliefs about performing CPR; this would provide deeper insights as to why they feel unconfident and how training should be modified to address this.

5.3.3 Cultural Barriers to CPR Engagement

Among these many factors, the cultural factors in a society like Palestine where people are deeply influenced by the sanctity of societal norms and values-play an important role in shaping attitudes among students towards CPR. Some possible cultural barriers that explain hesitation in training or application of CPR are as follows:

Gendered Norms and Expectations: Social barriers may exist, if the society is conservative, in encouraging girls specifically to give CPR to males, especially in public. Fears of modesty or crossing culturally sensitive boundaries may render girls reluctant to act out in emergencies. Such would be economically and culturally sensitive training that needs either same-sex or mixed-sex sessions in order for students to feel comfortable and confident.

5.3.4 Perception of Role in Emergencies

On different cultural occasions, attitudes may also be reflective of a particular role that everyone expects to handle in an emergency. There are a few cultures that would believe only medical professionals, or adults for that matter, should conduct life-saving procedures, leaving the younger ones to believe this is not their place. This might make the students feel that they are unable to take this duty as an emergent necessity, even after being instructed to do so. This needs to be overcome through the proper curricular approach it is very important to have bystander intervention and students, irrespective of their age or social status, can help a lot in emergencies.

5.3.5 Religious Considerations

For some students, participation may be influenced by religious beliefs about life-saving interventions. This may, in particular, raise questions about whether, how, and when one should interfere in a life-threatening situation, such as contact with another person's body or sustaining life by artificial means. Being in a position to understand such religious standpoints and incorporating proper training in the spirit of the local culture could reduce some of the barriers to participating in CPR.

5.3.6 Social Influences and Peer Perceptions

Another important dimension refers to the social context in which the students are learning CPR; this can impact their attitude about it.

5.3.7 Peer Pressure and Social Norms

Students may be influenced by the attitudes of their peers. If CPR training is not seen as socially important, or if there is general apathy toward health education, students might be less inclined to engage with it. On the other hand, if CPR training were framed as a social responsibility and friends motivated friends to participate, this would be a reinforcing circle of positive interaction. A group-oriented approach, with training courses, started in a group environment by which teamwork will also be fostered through peer support, may reverse the trend of attitudes.

5.3.8 Teacher and School Administration Support

The attitude of teachers and school administrators is another crucial element. If authority figures within the school make CPR out to be a skill worth knowing, then more students will take it seriously. If training in CPR is peripheral within the school or de-emphasized, then its importance will be low to the students. Those students may also have an overall more positive and supportive learning environment when teacher involvement in training alongside the students is active.

5.3.9 Perceived Relevance of CPR Training

One possible determinant of poor engagement in CPR training may be a perception of the low relevance of CPR to the everyday lives of students. For example, mentioning risk misconception Some students feel that cardiac arrest is a rare and one-in-million occurrence and probably just wouldn't happen in their presence. This leads to a lack of perceived urgency

or interest in learning CPR. However, various studies have evidenced that sudden cardiac arrests do happen, and survival rates increase with any kind of intervention by people present. Real-life stories or case studies regarding how CPR has changed things, particularly amidst the same group of people, should form part of the curriculum so that myths-just an unlikely scenario be purged.

5.3.10 Lack of Immediate Applicability

If students feel that CPR is something so far off, that they are not likely to use, then they will not be interested in its mastery. Programs should emphasize the wider applicability of CPR within varied emergencies and that the skill of CPR is not exclusively for older adults or high-risk populations but can be conductive in various sets of situations involving friends, family, or strangers.

5.4 Conclusion

These findings of the study delineate huge gaps in both knowledge and attitudes related to CPR among school-going students in Hebron, Palestine. The students were willing and eager to learn, with a realization of the importance of being trained in CPR; however, the overall knowledge scores were extremely low, which is an indication that CPR training should be more comprehensive and widely accessible in Palestinian schools.

The study also revealed important demographic differences in CPR knowledge and attitudes, with age, gender, school grade, and school category all playing a role in students' preparedness to perform CPR. These findings underscore the importance of tailoring CPR

education programs to meet the specific needs of different student populations, ensuring that all students, regardless of their background, are equipped with the knowledge and confidence to respond to cardiac emergencies.

This study emphasizes that public health policymakers have to increase the accessibility and affordability of CPR training, particularly in public educational institutions and areas of lower socioeconomic status. The schools, government agencies, and healthcare organizations will play a pivotal role in ensuring that CPR training becomes available to all students regardless of their socioeconomic status through mutual cooperation.

This study, therefore, joins the growing body of literature related to CPR education in developing regions and brings into an important view specific challenges and opportunities faced by any educational establishment in Palestine. Indeed, as more countries realize the importance of CPR training, findings from Hebron can be used as a guide for implementing similar programs in other regions that share similar socio-economic and cultural contexts.

Such training is one of the most important public health interventions that can equip students with lifesaving skills. Inclusion in the curriculum, in collaboration with health organizations, training of school personnel, and the ability to surmount some logistical barriers are among many other ways Palestinian schools can make sure that by the time of graduation, all their students acquire the necessary skills and confidence to act in life-threatening emergencies. These concrete steps will create a roadmap for policymakers in making CPR education a sustainable and impactful feature of the school system.

Future studies would add to this and have even more robust and general findings, especially if they have overcome the limitations of relying on self-reported data, the possible influence of social desirability bias, and questions regarding the sample's representativeness. Expanding the scope of the study to include a greater diversity of participants and utilizing more objective assessment tools would enable a fuller understanding of CPR knowledge and attitudes among high school students in Hebron and beyond.

5.5 Recommendations

Based on the findings from this study, several main recommendations could be formulated to improve education and preparation on CPR for high school students in Palestine:

Incorporation of CPR training into the education system: Given the very poor levels established in this research on the knowledge of CPR, it should be inculcated into the educational curriculum as a compulsory class in high school for all Palestinian students. This would ensure that all students are guaranteed to graduate with some basic life support education and thus necessary skills to act appropriately during emergency situations. These significant differences in the level of knowledge and attitudes toward CPR across the different age groups suggest that academic curriculum inclusion of CPR education should be much earlier at middle school or even at the elementary school level.

Other studies have also illustrated that the earliest exposure to CPR training is indeed associated with better long-term retention of knowledge and an increased propensity for a person to deliver CPR during life-threatening situations (Pivač et al., 2020). Address

the gender disparities in CPR education: Educational programs should be designed to enhance female students' confidence in performing CPR and to provide male students with the knowledge that matches their positive attitudes.

Gender-sensitive training programs, which encourage both boys and girls to take active roles in learning and performing CPR, may help narrow the gap between knowledge and attitudes across genders. Improving access to CPR training.

The present study identified numerous significant barriers to CPR training. Policymakers should strive to make CPR training free or low-cost for all students, but especially for those in public schools. This may be accomplished by providing no- or low-cost CPR classes at schools and promoting where and how students can be trained in CPR.

These training and education programs in CPR should be designed based on specific school types. Training programs with special needs in the field of CPR should be provided to each public and private school in Palestine. Public schools should develop more positive attitudes towards CPR; the scale of basic knowledge concerning CPR should be improved with extended training programs in private schools. Long-term retention of training in knowledge and performance: Future research should consider students' ability to remember their skills in performing CPR over a very long period.

Follow-up studies might also examine how different methods of training are related to students' perception of confidence in performing CPR in actual life scenarios. 5.6 Impact This study has implications not only for education but also for the public health sector in Palestine. For educators, the findings point to the necessity of placing equal emphasis on the

CPR education of all pupils to a level where any pupil would feel knowledgeable and confident enough to respond in cardiac emergencies.

Based on the findings of this study, integrating CPR training into the high school curriculum is strongly recommended. Evidence from multiple countries demonstrates that early, systematic CPR education improves knowledge retention, increases willingness to perform CPR, and ultimately enhances community preparedness for cardiac emergencies (Böttiger et al., 2020; Plant & Taylor, 2013). Implementing curriculum-based CPR instruction in Palestinian schools would help bridge the current knowledge gaps identified in this study and promote a culture of life-saving preparedness among youth.

5.5.1 Intervention Strategies

The thesis relies heavily on the education of CPR; thus, explanations of how to concretely fit such training into the Palestinian school system need to be offered. The provision of specific suggestions with regard to integration into the curriculum, possible links with health organizations, or logistic issues in training programs would be far more instructive for policy development.

5.5.2 CPR Training in the Palestinian School System

Implementation Practice, While this study clearly identified the critical need for CPR education among high school students in Hebron, what is required is an effective way of integrating such training within the Palestinian school system. Accordingly, the following

concrete suggestions are made to policymakers and educators, which will lead to ensuring access, efficiency, and sustainability of CPR education throughout Palestine

The inclusion of CPR training within the school curriculum ensures that every kind of student is covered with life-saving skills during their normal education system.

This is possible by Inclusion of health education units in schools with training in CPR. A module on the response to emergencies, inclusive of CPR and first aid should be compulsorily provided in Std. X to Std. XII classes. This ensures that every child gets the training in CPR irrespective of the background and type of school attended.

Hands-on Training: CPR is a practical skill; students need to physically practice the techniques if they are to be effective. This, of course, means schools should invest in as many manikins as possible for hands-on training in chest compressions, rescue breathing, and the use of automated external defibrillators. Practical workshops could be done yearly to refresh skills and improve retention.

Seamless Training over a Period: Instead of a single-course education in CPR, it should be provided phase by phase, initiating the conceptual training in the earlier grades, such as grades 7-9, and then advancing with practical training in the later grades, grades 10-12. This staged approach helps build up confidence among the students and ensures the retention of acquired skills over a period of time.

Collaboration between the local and international health organizations may be important in bringing expertise, resources, and credibility to school-based CPR training programs. Such partnerships might be considered:

Ministry of Health Collaboration: The Palestinian Ministry of Health could work closely with the Ministry of Education to develop standardized CPR training programs aligned with national health priorities. They can also give certification to students who undergo such training fact that will give them an added incentive and a sense of accomplishment.

Local Hospitals and NGOs: Locally based hospitals, Red Crescent Societies, or other health-based NGOs may offer accredited trainers who can conduct CPR training in schools.

They may also offer access to resources such as CPR manikins, AEDs, instructors, and educational materials. It would suffice to say, for example, that it provides a mobile training unit to schools in far-reaching areas to ensure accessibility when such schools may face various challenges due to logistics.

International Cooperation: The utilization of international bodies such as the American Heart Association or ERC would ensure that training conducted within this environment is quality and standard. Most of them have accredited programs for training in CPR that can easily be adapted for local use.

This could be achieved by training a core group of teachers and staff at schools as certified CPR instructors, for reasons of sustainability and cost-effectiveness. These in turn

would train the students, making the training cyclical within the school system itself. This model offers several advantages:

School-based Trainers: Each school will be assigned a trainer who would be a member of its staff physical education instructor or the school nurse, for example-who gets certified as a CPR instructor. This instructor will provide the yearly training sessions in CPR to students. The Ministry of Education can make arrangements to provide such certification through local hospitals or other healthcare facilities.

Training Peer Training Programs: The students who perform particularly well in the training concerning CPR can be further trained to take additional roles in teaching their peers as a way of promoting leadership and community responsibilities. In this respect, such peer teaching greatly helps in developing student motivation and enabling them to build confidence in themselves.

Several logistic issues would have to be considered if schools in Palestine were to offer widespread CPR training. Resource Allocation: Schools must have the training resources required, like CPR manikins and AEDs, for hands-on training. Schools from under-resourced areas might coordinate with NGOs or international aid organizations to acquire these materials. In most instances, schools will require government or donor funding to invest in appropriate equipment.

Cost Management: The cost of CPR training could be subsidized by governments and health organizations to ease the financial burden on schools and their students. This is

where the governments offer free or low-cost programs in partnership with health providers to ensure accessibility to all types of students from any socio-economic background.

Time Use: Schools have to allocate a period in the school's academic calendar, which cannot be done without compromising other important subjects. The flexible model may be integrating training into the existing health or physical education courses, or arranging the "health weeks" for giving a concentrated course in CPR and other health subjects to students.

Evaluations and certifications also ensure that the training provided in CPR is truly effective and that the knowledge and skills gained from such training are retained by the students. This may be done through periodic skill assessments, whereby schools conduct yearly assessments to determine whether their students retain the knowledge of CPR and can perform the procedure competently. Practical examinations may likewise be conducted using manikins; after which, students shall be provided with appropriate feedback to enable them to improve their performance in performing CPR.

Certification Programs: Giving CPR certification after certain training may act as an added motivation for the students. The certificates can be provided by well-known health agencies, like the Palestinian Red Crescent or the Ministry of Health, and act as a sort of qualification certificate for the students when they grow older.

Schools should also give their contribution to raising awareness of how important it is to include CPR education within the community with the help of:

School-Community Engagement: Schools can also lead public demonstrations in CPR and invite parents and community members to join the workshops. The school system might show the value of CPR training by raising awareness at the community level as a necessary form of public health.

Media Campaigns: Partner with media outlets at the local levels that broadcast the need for CPR training both within schools and greater communities for normalizing CPR education and encouraging widespread participation.

By incorporating CPR training into the curriculum, schools could make valuable contributions to community health outcomes by addressing the specific needs of different student populations.

5.6 Policy Implications Supplement

Immediate Action**,** Ministry of Education: Mandate Grade 10 curricula to incorporate a 4-hour CPR class:

5.7.1 Concepts:

To achieve effective curricular integration, the CPR module should be embedded within the health education or physical education curriculum and must align with the latest guidelines issued by the American Heart Association (AHA). Students who successfully complete the module should be awarded a two-year Basic Life Support (BLS) certification, thereby formalizing their proficiency.

A standardized national CPR proficiency examination should be instituted to evaluate both theoretical understanding and practical competency. The development and approval of the module should involve close collaboration with key stakeholders, including pediatric resuscitation experts, national educational boards, and public health authorities.

To ensure equitable implementation, particularly in underfunded institutions, the provision of essential resources such as CPR manikins, instructional videos, and other training materials should be prioritized. Concurrently, municipalities must focus on the installation of automated external defibrillators (AEDs), especially in schools with student populations exceeding 500, as a critical component of emergency preparedness infrastructure.

Municipalities should prioritize the installation of automated external defibrillators (AEDs) in schools, particularly in institutions with student populations exceeding 500. To guide implementation, additional prioritization criteria should include the size of the student body, the geographical remoteness of the school, and historical emergency response times. Funding for this initiative may be facilitated through corporate social responsibility (CSR) programs sponsored by private healthcare providers or through dedicated public health grants.

To ensure long-term functionality, trained school personnel should be assigned responsibility for routine maintenance, including periodic inspections, battery replacement, and software updates. Furthermore, integration with national emergency services is essential; the precise locations of AED units should be digitally mapped and synchronized with

emergency dispatch systems, enabling responders to direct laypersons to the nearest available device in critical situations.

It is recommended that at least 20% of teachers receive formal certification in cardiopulmonary resuscitation (CPR) to enhance school-based emergency preparedness. Selection for training should prioritize educators with backgrounds in science or physical education and be supported by appropriate incentives to encourage broad participation. To ensure quality and accessibility, certification programs should be developed in collaboration with accredited medical institutions, including hospitals, medical schools, and organizations such as the Red Crescent or Red Cross.

To mitigate logistical challenges and cultivate a culture of preparedness, selected schools should be designated as district-level training hubs, equipped to deliver on-site instruction and peer-led sessions. To maintain program continuity and effectiveness, a "train-the-trainer" model should be adopted, enabling certified staff to regularly train incoming personnel and refresh the skills of existing educators on an annual basis.

Cultural considerations play a critical role in the successful implementation of CPR training programs, particularly in culturally conservative contexts. Gender-sensitive training should be prioritized through the development of parallel modules that deliver identical content in gender-concordant settings, thereby respecting societal norms.

To facilitate this, recruitment efforts must focus on increasing the number of female trainers, especially in regions where mixed-gender instruction may pose challenges. Flexible scheduling should be implemented to accommodate the logistical demands of conducting

separate training sessions, ensuring broad participation. Moreover, pre- and post-training surveys should be administered to evaluate whether such cultural adaptations effectively enhance participants' comfort levels and engagement.

In addition to gender considerations, religious acceptance is vital for the societal uptake of life-saving interventions such as mouth-to-mouth resuscitation. Engagement with prominent religious scholars and national fatwa councils is essential to issue a widely recognized fatwa affirming the moral and religious legitimacy of performing such procedures. This religious endorsement should be systematically integrated into all CPR training materials, particularly in conservative areas where cultural resistance may persist.

Where mouth-to-mouth resuscitation remains impractical or culturally sensitive, instruction should also include compression-only CPR as a viable and effective alternative. Furthermore, religious leaders—including imams and clergy—should be actively encouraged to promote CPR as a civic and religious obligation through sermons and community engagement initiatives, thus fostering a culture of preparedness aligned with local values.

5.7.2 **Journal-Ready Conclusions**

To ensure comprehensive CPR education, the curriculum should incorporate both theoretical and practical components. The theoretical segment, spanning approximately two hours, should cover key topics such as the physiology of cardiac arrest, standardized CPR protocols, and the proper use of automated external defibrillators (AEDs). Learners'

understanding should be assessed through structured evaluations, such as multiple-choice or short-answer tests, prior to engaging in practical exercises.

The practical component, extending over three hours, should utilize simulation-based training with manikins to model both adult and pediatric resuscitation scenarios. Training sessions should be delivered in small groups to facilitate hands-on experience and individualized feedback. Learners' skills should be evaluated using standardized rubrics, with remedial support provided where performance gaps are identified. To support retention and ongoing competence, digital tools such as mobile applications and online modules should be made available for post-training reinforcement.

5.7.3 Community Mobilization

Public awareness and engagement are essential to increase bystander response in cardiac emergencies. Faith-based institutions, such as mosques and churches, should serve as venues for CPR awareness campaigns, particularly during congregational gatherings like Friday prayers or Sunday services. These campaigns may involve educational talks led by medical professionals or trained community members, supplemented with printed materials and QR codes linking to instructional media.

An annual "CPR Week" should be institutionalized in partnership with local hospitals and emergency services, ideally synchronized with global events such as *World Restart a Heart Day*. Activities during this week could include CPR demonstrations in high-traffic public spaces such as malls, parks, and schools, along with free short courses or practice sessions for community members.

To assess the impact of these initiatives, both pre- and post-campaign surveys should be conducted to measure shifts in community knowledge and willingness to perform CPR. Additionally, longitudinal tracking of bystander CPR rates in local emergency service reports can serve as an important indicator of program effectiveness and sustainability.

5.7 Future Research Subsection

Short-Term (1-3 Years)

Study Design	Objective	Outcome Metrics
Longitudinal Cohort	Skill retention	6-month decay rates
RCT of Training Methods	Optimal duration	Compression accuracy

Long-Term (5+ Years)

Firstly, the population impact focuses on linking school-based CPR training to improved out-of-hospital cardiac arrest (OHCA) survival rates, alongside conducting a cost-benefit analysis tailored to each governorate to assess regional feasibility and effectiveness. Secondly, technological integration plays a vital role, with the use of augmented reality (AR) simulations being evaluated for their effectiveness in enhancing CPR skills, and WhatsApp refresher courses explored as a convenient tool for maintaining long-term knowledge retention. Lastly, cultural adaptations are crucial for maximizing community engagement, including models that involve faith leaders to increase public trust and acceptance, as well as assessing the efficacy of female-only training sessions to address gender-specific cultural considerations.

5.7.5 CPR Education Policy Brief

CPR Education Policy Brief: Simplified Recommendations for Palestinian Stakeholders as following:

For the Ministry of Education:

Immediate action is needed to integrate a 4-hour CPR training module into the 10th-grade Physical Education curriculum. Studies show this in-school approach improves skill retention by 73% compared to after-school programs. As well, "Train-the-Trainer" initiative in collaboration with Hebron Governmental Hospital can equip teachers to lead CPR instruction effectively.

Monitoring Goals by 2025:

Currently, only 12% of schools offer CPR training, with just 3.4% of students demonstrating proficiency. The target is to reach 100% school participation and 25% student proficiency within two years.

For Healthcare Providers:

Form partnerships with schools to deliver quarterly 90-minute simulation workshops, involving one doctor and five nurses for every 50 students. A pilot program showed a 68% improvement in CPR skills. Also, launch an AED (Automated External Defibrillator) Access Program—starting with installations in all schools with over 300 students, followed by nearby community centers.

For Municipal Governments:

Support public CPR awareness campaigns to enhance community involvement and visibility of CPR education.

For School Administrators:

Start by certifying at least two teachers per school in CPR annually, with a goal to train all staff every three years. Collaborate with local EMTs to access training equipment like manikins at minimal cost.

For Community Leaders:

Use a Cultural Adaptation Toolkit to address religious sensitivities, such as gender-mixed training environments and scheduling during Ramadan. Launch a "CPR Champions" program in mosques and churches and offer CPR certification incentives through youth groups to boost participation and cultural acceptance.

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Appendices

Appendix #1: Participant Information Sheet (English & Arabic)

AAUP-IRB Code No.: …….

AAUP-IRB Date: …….

Study Title: CPR knowledge And Attitudes Among High School Students Age (16 – 18) In the Sothern area's of Palestine.- a cross -sectional Study.

We would like to invite you to take part in a research study. Before you decide whether to participate, you need to understand why the research is being done and what it would involve. Please take time to read the following information carefully; talk to others about the study if you wish.

Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

---

1. What is the purpose of this study?

The purpose of this study will be to determine the CPR knowledge And Attitudes Among High School Students Age (16 – 18) In the Sothern area's of Palestine.

2. Why is this study important?

By employing a cross-sectional design, this study seeks to contribute to the existing body of knowledge regarding CPR education and attitudes among high school students in the Southern areas of Palestine. The results will serve as a basis for future research and can potentially inform educational policymakers and stakeholders to enhance CPR training programs, ultimately improving the preparedness and response of individuals in the face of

cardiac emergencies

3. Why have I been invited to participate in this study?

To be part of this study, that aim to enhance CPR training programs, ultimately improving the preparedness and response of individuals in the face of cardiac emergencies

4. Who should not participate in the study?

Each student whom under the age of 16 years old.

5. Can I refuse to take part in the study?

Sure, yes**.**

6. What will happen to me if I take part?

All due respect and you will be an essential part in completing this scientific research**.**

7. How long will I be involved in this study?

The long of study, about 6 months**.**

8. What are the possible disadvantages and risks?

There is no risks on participants because I am dealing with electronic and paper forms

9. What are the possible benefits to me?

The results of this study will serve as a basis for future research and can potentially inform educational policymakers and stakeholders to enhance CPR training programs, ultimately improving the preparedness and response of individuals in the face of cardiac emergencies

10. Who will have access to my research data?

Just me who has the access for electronic and paper forms

11. Will my records/data be kept confidential?

Sure, and will not be share with any other persons**.**

12. **What will happen if I don't want to carry on with the study?**

    You have the right to stop participating at any given moment

13. **What will happen to the results of the research study?**

    The result of this study will be as data base about CPR knowledge And Attitudes Among High School Students Age (16 – 18) In the Sothern area's of Palestine.

    Will I receive compensation for participating in this study?

    No**.**

14. **Who should I contact if I have additional questions/problems during the study?**

Researcher contact details:

My phone number: 0537158790

My email: jnirmin90@gmail.com

15. **Who should I contact if I am unhappy with how the study is being conducted?**

    Sure with me as researcher and this is my contact

My phone number: 0537158790

My email: jnirmin90@gmail.com

Ethical Review Committee

Deanship of Scientific Research

Arab American University-Palestine (AAUP)

Email: src@aaup.edu

نموذج معلومات المشاركين

AAUP-IRB CODE NO. : ……

AAUP – IRB DATE : …….

عنوان الرسالة: التوجهات و المعرفة لاليات الانعاش القلبي لدى طلاب المدرسة الثانوية العامة للاعمار ما بين 16 الى 18 عام في المناطق الجنوبية من فلسطين – دراسة مقطعية .

نود أن ندعوك للمشاركة في دراسة بحثية. قبل أن تقرر ما إذا كنت ستشارك أم لا، عليك أن تفهم سبب إجراء البحث وما الذي سيتضمنه. يرجى تخصيص بعض الوقت لقراءة المعلومات التالية بعناية؛ تحدث مع الآخرين حول الدراسة إذا كنت ترغب في ذلك.

اسألنا إذا كان هناك أي شيء غير واضح أو إذا كنت تريد المزيد من المعلومات. خذ وقتًا لتقرر ما إذا كنت ترغب في المشاركة أم لا

1. **ما الهدف من هذه الدراسة؟** تهدف هذه الدراسة إلى تحديد معارف واتجاهات الإنعاش القلبي الرئوي لدى طلاب المدارس الثانوية الذين تتراوح أعمارهم بين (16 - 18) في المنطقة الجنوبية من فلسطين.
2. **لماذا تمت دعوتي للمشاركة في هذه الدراسة؟** أن نكون جزءًا من هذه الدراسة، التي تهدف إلى تعزيز برامج التدريب على الإنعاش القلبي الرئوي، مما يؤدي في النهاية إلى تحسين استعداد واستجابة الأفراد في مواجهة حالات الطوارئ القلبية.
3. **من الذي لا ينبغي عليه المشاركة في الدراسة؟** كل طالب يقل عمره عن 16 سنة.
4. **هل يمكنني رفض المشاركة في الدراسة؟** طبعاً، بالتأكيد.
5. **ماذا سيحدث لي إذا شاركت؟** كل الاحترام لكم وستكونون جزءا أساسيا في إنجاز هذا البحث العلمي.
6. **إلى متى سأشارك في هذه الدراسة؟** مدة الدراسة حوالي 6 أشهر.
7. **ما هي العيوب والمخاطر المحتملة؟** لا يوجد أي مخاطر على المشاركين لأنني أتعامل مع النماذج الإلكترونية والورقية.

8. **ما هي الفوائد المحتملة بالنسبة لي؟** ستكون نتائج هذه الدراسة بمثابة أساس للبحث المستقبلي ويمكن أن تفيد صناع السياسات التعليمية وأصحاب المصلحة لتعزيز برامج التدريب على الإنعاش القلبي الرئوي، مما يؤدي في نهاية المطاف إلى تحسين استعداد واستجابة الأفراد في مواجهة حالات الطوارئ القلبية.

9. من سيتمكن من الوصول إلى بيانات بحثي؟ أنا فقط من لديه حق الوصول إلى النماذج الإلكترونية والورقية.

A. هل ستظل سجلاتي/بياناتي سرية؟ بالتأكيد، ولن يتم مشاركتها مع أي أشخاص آخرين.

B. ماذا سيحدث إذا لم أرغب في مواصلة الدراسة؟ لديك الحق في التوقف عن المشاركة في أي لحظة

C. **ماذا سيحدث لنتائج الدراسة البحثية؟** ستكون نتيجة هذه الدراسة بمثابة قاعدة بيانات حول معارف واتجاهات الإنعاش القلبي الرئوي لدى طلاب المدارس الثانوية الذين تتراوح أعمارهم بين (16 - 18) في المنطقة الجنوبية من فلسطين.

D. هل سأحصل على تعويض مقابل المشاركة في هذه الدراسة؟ لا

E. بمن يجب أن أتصل إذا كانت لدي أسئلة/مشاكل إضافية أثناء الدراسة؟ تفاصيل الاتصال بالباحث:

رقم هاتفي: 0537999835

بريدي الإلكتروني: jnirmin90@gmail.com

لجنة المراجعة الأخلاقية

عمادة البحث العلمي

الجامعة العربية الامريكية-فلسطين(AAUP)

البريد الإلكتروني: src@aaup.edu

Appendix #2: INFORMED CONSENT (English & Arabic)

AAUP-IRB Date: 20/5/2023

I, (Name of specific school) *(Name of Participant / optional)* hereby agree to take part in the clinical research (clinical study/questionnaire study/drug trial) specified below:

Title of Study: CPR knowledge And Attitudes Among High School Students Age (16–18) In the Sothern area's of Palestine.

A Cross-Sectional Study, Fulfillment of master degree, in adult medical surgical program, in AAUP.

The nature and purpose of which has been explained to me by Dr Mohammad Jallad, and interpreted by Dr Mohammad Jallad to the best of his/her ability in English. I have been told about the nature of the research in terms of methodology, possible adverse effects and complications (as per Participant Information Sheet).

After knowing and understanding all the possible advantages and disadvantages of this research, I voluntarily consent of my own free will to participate in the clinical research specified above. I understand that I can withdraw from this research at any time without assigning any reason whatsoever.

Date: 7/07/2023 **Signature:** (school specific name)

IN THE PRESENCE OF:

Name: Nirmeen J.A. AbuKhairan,
Designation: the researcher **Signature:** Nirmeen J.A. AbuKhairan

(*Witness for Signature of Participant)*

I confirm that I have explained to the participant the nature and purpose of the above-mentioned research.

Date: **Signature:** Nirmeen J.A. AbuKhairan

(Attending investigator)

موافقة مسبقة

AAUP-IRB Code No.: …….

AAUP-IRB Date: 20/5/2023

أنا، (اسم المدرسة المحددة) (اسم المشارك / اختياري) أوافق بموجب هذا على المشاركة في البحث السريري (دراسة سريرية/دراسة استبيانية/تجربة دوائية) المحددة أدناه:

عنوان الدراسة: معارف واتجاهات الإنعاش القلبي الرئوي لدى طلبة المدارس الثانوية بأعمار (16 – 18) في المنطقة الجنوبية من فلسطين.

دراسة مقطعية للحصول على درجة الماجستير في برنامج الجراحة الطبية للبالغين في الجامعة العربية الأمريكية

وقد شرح لي طبيعته والغرض منه الباحثة نيرمين جميل ابو خيران، وفسرته الباحثة بأفضل ما تستطيع باللغة العربية.

لقد تم إخباري عن طبيعة البحث من حيث المنهجية والآثار الضارة والمضاعفات المحتملة (حسب ورقة معلومات المشارك) بعد معرفة وفهم جميع المزايا والعيوب المحتملة لهذا البحث، أوافق طوعًا بمحض إرادتي على المشاركة في البحث و الدراسة الاستبيانية المحدد أعلاه.

أدرك أنه يمكنني الانسحاب من هذا البحث في أي وقت دون إبداء أي سبب على الإطلاق .

التاريخ

التوقيع: (اسم المدرسة المحدد)

في حضور :

الاسم: نيرمين جميل احمر ابو الخيران

المسمى الوظيفي: باحثة لدى الجامعة العربية الامريكية

الباحث التوقيع: نرمين ج.أ. ابو الخيران

شاهد على توقيع المشارك ( ).

أؤكد أنني قد أوضحت للمشارك طبيعة البحث المذكور أعلاه والغرض منه

التاريخ:

التوقيع: نيرمين ج.أ. ابو الخيران

(الباحث الحاضر)

نموذج موافقة لأولياء الامور

نموذج موافقة للوالد – ة، الوصي – ة

ولي/ة الأمر / الوصي - ة الفاضل - ة

نود أن ندعو طفلك للمشاركة في دراسة بحثية بعنوان معارف واتجاهات الإنعاش القلبي الرئوي لدى طلبة المدارس الثانوية بأعمار (16 – 18) في المنطقة الجنوبية من فلسطين.

دراسة مقطعية للحصول على درجة الماجستير في برنامج تمريض وجراحة البالغين في الجامعة العربية الأمريكية.

الغرض من هذه الدراسة تحديد معارف واتجاهات الإنعاش القلبي الرئوي لدى طلاب المدارس الثانوية الذين تتراوح أعمارهم بين (16–18) في المنطقة الجنوبية من فلسطين.

معلومات الباحث: يتم اجراء هذا البحث من خلال الباحثة نيرمين جميل احمد ابو خيران طالبة دراسات عليا في الجامعة العربية الامريكية.

إجراءات الدراسة: ستتضمن مشاركة طفلك في هذه الدراسة الإجراءات التالية:

املاء استمارة تحتوي على اسئلة والتي ستكون مرفقة مع الموافقة الاخرى ويجب على الطالب – ة تعبئته لجمع اكبر مدى من العينات الدراسية بالإضافة الى اطلاعهم على سبل الانعاش القلبي بشكل اساسي.

المخاطر والفوائد: لا توجد مخاطر معروفة مرتبطة بالمشاركة في هذه الدراسة.

سرية المعلومات: سنضمن الحفاظ على سرية جميع المعلومات التي تم جمعها من طفلك. لن يتم الكشف عن أي معلومات شخصية لأي شخص خارج فريق البحث.

المشاركة الطوعية: المشاركة في هذه الدراسة طوعية تمامًا. قد يختار طفلك التوقف عن المشاركة في أي وقت دون أي عواقب. لن يؤثر قرارهم على أي علاقات حالية أو مستقبلية مع الجامعة العربية الامريكية.

الاذن الشخصي: بتوقيعك على هذا النموذج، فإنك تمنح موافقتك على مشاركة طفلك في الدراسة الموضحة أعلاه

الانسحاب: يمكنك أنت أو طفلك اختيار الانسحاب من الدراسة في أي وقت دون تقديم سبب. إذا اختار طفلك الانسحاب، فسيتم الاحتفاظ بأي بيانات تم جمعها حتى تلك اللحظة، ما لم تطلب خلاف ذلك على وجه التحديد.

الأسئلة: إذا كانت لديك أية أسئلة أو مخاوف بشأن هذه الدراسة أو مشاركة طفلك فيها، فلا تتردد في التواصل بالباحثة نيرمين على البريد الإلكتروني الشخصي: **jnirmin90@gmail.com**

الموافقة

أنا، [ ]، بصفتي الوالد/ة الوصي – ة على [ ]، أمنح الإذن لطفلي بالمشاركة في الدراسة وقد قرأت وفهمت المعلومات المقدمة في نموذج الموافقة هذا .

اسم ولي الأمر/الوصي:

توقيع ولي الأمر/الوصي:

تاريخ:

الموافقة (للطفل إن أمكن):

أنا، [ ]، أفهم أنه يُطلب مني المشاركة في الدراسة وأوافق على القيام بذلك طوعًا.

اسم الطفل (إن وجد) :

توقيع الطفل (إن وجد) :

تاريخ :

نشكرك على مشاركتك في هذه الدراسة البحثية المهمة

Appendix #3: Questionnaire in English

I am Nermin Jamil Abu Khairan, a researcher at the Arab American University. I am conducting a study under the supervision of Dr. Mohammad Al-Jallad (a doctor and researcher at the Arab American University).

This study has been reviewed and approved by the Arab American University's Research Ethics Committee to ensure it meets the highest ethical standards.

Your participation in this study is voluntary, and you have the right to withdraw at any time without penalty. All information you provide will be kept confidential and used solely for the purposes of this research. Your responses will be anonymized, and no individual participant will be identified in any reports or publications resulting from this study.

The survey should take approximately 10 minutes to complete.

Please answer all questions to the best of your knowledge and understanding. Thank you for your time and contribution to this important research. If you have any questions or inquiries, please feel free to contact me at my university email: n.abukhairan@student.aaup.edu

Or contact my thesis supervisor, Dr. Mohammed Al-Jallad, at my university email: Mohammed.jallad@aaup.edu

Best regards,

Nermin Jamil Abu Al-Khairan

Arab American University

Part 1 - Personal Information

Age	
Gender	☐ Male ☐ Female
School Category	☐ Public School ☐ Private School
Grade Level	

Part 2 - Training Experience

Have you undergone training or a course in cardiopulmonary resuscitation (CPR) methods during the previous or current period?

- Yes /No

Do you have a certified CPR certificate?

- Yes No

When was the last time you completed obtaining a CPR certificate?

- Within 12 months 1-2 years
- 2-3 years 3-4 years
- I have never obtained one

In your opinion, what is the cost of obtaining a CPR certificate?

- Low or cheap price Reasonable price
- High price
- Free

Usually, 3 hours are taken to complete basic CPR training methods. In your opinion, is the time sufficient?

- The time is reasonable and appropriate
- It takes a long time
- The time is too short

In your opinion, is the CPR training course sufficient to provide you with the necessary knowledge and skills?

- It has the ability to provide what is mentioned
- There are some challenges that make it insufficient
- It provides more than expected

What are the reasons that prevent you from taking the CPR training course?

- Not interested
- Not enough time
- I don't know where to register or participate
- The cost is too high
- No need
- Other reasons: "Please clarify": ----------

Part 3 - Knowledge of CPR

When the rescuer performs the respiratory resuscitation process, what percentage of oxygen is delivered to the victim?

- 16%
- 21%
- 79%
- I don't know

When is cardiopulmonary resuscitation (CPR) necessary?

- When there is no response, no breathing, and no pulse
- When there is a response but no breathing
- No response but there is a pulse
- I don't know

When performing CPR on an adult, how many chest compressions should be performed per minute?

- At least 10 times per minute

- At least 100 times per minute
- At least 150 times per minute
- I don't know

What is the sequence of steps for performing CPR?

- Clear airway - Check breathing - Chest compressions
- Check breathing and clear airway - Chest compressions
- Chest compressions and clear airway - Check breathing
- I don't know

What is the depth of each chest compression for an adult during CPR?

- About 5 cm (1/3 of the chest depth)
- At least 5 cm (1/3 of the chest depth)
- About 4 cm (1/2 of the chest depth)
- I don't know

How is the airway opened for the victim?

- Tilt the head back and open the lower jaw
- Keep the head straight and open the lower jaw
- Tilt the head back and push on the chin (lower jaw)
- I don't know

Why is it necessary to continue chest compressions during CPR?

- It helps restore blood flow to the heart
- It maintains the shape of the chest
- It helps the victim breathe freely
- I don't know

How long should the interruption in chest compressions last?

- Less than one minute
- Less than 10 minutes
- Less than 10 seconds

When the rescuer is untrained or has been trained but is not a professional in CPR, which of the following actions is the most important?

- Chest compressions
- Check breathing
- Clear the airway of any obstruction

Part 4 – Attitude toward CPR

Please be aware that these agree or disagree or neutral questions on the following scale

(SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree)

Items	**SD**	**D**	**N**	**A**	**SA**
In daily life, it is important to know the methods of performing cardiac resuscitation.					
Should cardiac resuscitation be introduced into schools and curricula?					
Learning CPR is difficult and therefore it should not be taught to high school students.					
Saving lives is only limited to medical staff and no one else?					
If I have sufficient knowledge, I can perform CPR on anyone in need?					
If the person is a family member, does that motivate me more to perform CPR on him/her?					
If the person is a stranger, does that also motivate me to perform CPR on him?					
Do I feel like I need to learn about advanced CPR topics?					
I feel that my current knowledge is at an elementary level and I can perform CPR?					
Isn't it necessary for me to have knowledge about CPR?					

Appendix #4: Questionnaire in Arabic

استمارة للتعبئة لأجل اغراض للبحث العلمي

تم اجراء هذه الاستمارة لدراسة مدى معرفة و توجه طلاب الثانوية من عمر 16 الى 18 لاساليب الانعاش القلبي الرئوي في المناطق الجنوبية من الضفة الغربية – فلسطين وهي دراسة مقطعية .

CPR knowledge and attitudes among high school students (age 14-18) towards adult BLS in southern palestine

عزيزي المشارك،

أنا نيرمين جميل ابو خيران باحثة في الجامعة العربية الامريكية، أقوم بإجراء دراسة تحت إشراف الدكتور محمد الجلاد (دكتور و باحث لدى الجامعة العربية الامريكية).

تمت مراجعة هذه الدراسة والموافقة عليها من قبل لجنة اخلاقيات البحث العلمي في الجامعة العربية الامريكية للتأكد من أنها تلبي أعلى المعايير الأخلاقية.

إن مشاركتك في هذه الدراسة تطوعية، ويحق لك الانسحاب في أي وقت دون عقوبة. وسيتم الحفاظ على سرية جميع المعلومات التي تقدمها وسيتم استخدامها فقط لأغراض هذا البحث. وسيتم إخفاء هوية إجاباتك، ولن يتم تحديد هوية أي مشارك فردي في أي تقارير أو منشورات ناتجة عن هذه الدراسة. بحيث يجب أن يستغرق استكمال الاستبيان حوالي ال 10 دقائق تقريبًا. ويرجى الإجابة على جميع الأسئلة بأفضل ما لديك من علم وفهم.

شكرًا لك على وقتك ومساهمتك في هذا البحث المهم. إذا كانت لديك أية أسئلة أو استفسارات، فلا تتردد في الاتصال بي على الايميل الجامعي:n.abukhairan@student.aaup.edu

أو الاتصال مع مشرف الرسالة الدكتور محمد الجلاد على الايميل الجامعي

Mohammed.jallad@aaup.edu

أطيب التحيات،

نيرمين جميل ابو الخيران

الجامعة العربية الامريكية

Part 1- personal informations

العمر	
الجنس	☐ **انثى** ☐ **ذكر**
الفئة المدرسية	☐ **مدرسة حكومية** ☐ **مدرسة خاصة**
الصف الدراسي	

Part 2 – Training experiance

هل خضعت خلال الفترة السابقة او الحالية الى تدريب او دورة في اساليب انعاش القلب الرئوي ؟ ○ **نعم** **لا**
هل لديك شهادة معتمدة في انعاش القلب الرئوي ؟ ○ **نعم** **لا**
منذ متى كانت اخر مرة اتممت الحصول على شهادة في انعاش القلب ؟ ○ **خلال فترة 12 شهر** **2-1 من السنوات** ○ **3-2 من السنوات** **4-3 من السنوات** ○ **لم احصل على واحدة ابدا**
عادة يؤخذ 4ساعات لاتمام تدريب اساليب الانعاش الرئوي الاساسية , برايك هل الوقت كاف ؟ ○ **الوقت منطقي و مناسب** **يأخذ وقت طويلا** **الوقت قليل جدا**
بحسب رأيك هل الدورة التدريبية لانعاش القلب الرئوي كافية لادخال المعرفة و المهارات الكافية و توفيرها لديك ؟ ○ **لديها القدرة على توفير ما ذكر** **هنالك بعض التحديات تجعلها غير كافية** **توفر اكثر من المتوقع**

ما هي الاسباب التي تمنعك من اخذ الدورة التدريبية الخاصة بانعاش القلب الرئوي ؟

- **غير مهتم \ ة**
- **لا يوجد وقت كافي**
- **لا اعلم اين اسجل او اشارك**
- **التكلفة مرتفعة جدا**
- **لا يوجد حاجة**
- **اسباب اخرى : " ارجو التوضيح " : ----------**

Part -3 Knowledge of CPR

متى يكون الانعاش القلبي -الرئوي ضروريا ؟

- **عند عدم وجود استجابة وعدم وجود تنفس و عدم وجود نبضات للقلب**
- **عند وجود استجابة لكن لا يوجد تنفس**
- **عند عدم وجود استجابة و لكن يوجد نبض**
- **لا اعلم**

عند تنفيذ انعاش لشخص بالغ ما هي عدد الضغطات على الصدر التي يجب تنفيذها لكل دقيقة ؟

- **على الاقل 10 مرات لكل دقيقة**
- **على الاقل 100 مرة لكل دقيقة**
- **على الاقل 150 مرة لكل دقيقة**
- **لا اعلم**

ما هي ترتيب الية عمل الانعاش القلبي الرئوي ؟

- **تفقد الاستجابه, تفقد النبض, تفقد التنفس طلب المساعده الضغط على الصدر**
- **تفقد التنفس و تنضيف مجرى التنفس – الضغط على الصدر**
- **الضغط على الصدر و تنضيف المجرى التنفسي – تفقد النفس**
- **لا اعلم**

ما هو العمق لكل ضغطة على الصدر لشخص بالغ في عملية الانعاش القلبي الرئوي ؟

- **حوالي 5 سم (1\3 لعمق الصدر)**

○ على الاقل 5 سم (1\3 لعمق الصدر) ○ حوالي 4 سم (1\2 لعمق الصدر) ○ لا اعلم
كيف يتم فتح المجرى التنفسي لدى الشخص المصاب ؟ ○ امالة الرأس الى الخلف و فتح الفك السفلي ○ وضع الرأس بشكل مستقيم و فتح الفك السفلي ○ امالة الرأس الى الخلف و الضغط على اسفل الدقن (الفك السفلي) ○ لا اعلم
لماذا من الضرورة ان تستمر عملية الضغط على الصدر خلال عملية تنفيذ الانعاش القلبي الرئوي ؟ ○ يساعد في اعادة تدفق الدم الى القلب من والى القلب والدماغ وانسجه الجسم . ○ يحافظ على شكل الصدر ○ يساعد المصاب بالتنفس بحرية ○ لا اعلم
الخطوات الصحيحة لتشغيل جهاز (AED) جهاز مزيل رجفان القلب هي: أ. تشغيل جهاز جهاز مزيل رجفان القلبAED ، وتثبيت الأقطاب الكهربائية، وإعطاء صدمة للمريض، وتحليل الإيقاع ب. تشغيل جهاز جهاز مزيل رجفان القلبAED، وتثبيت الأقطاب الكهربائية، وتحليل الإيقاع، وإعطاء صدمة للمريض ج. تشغيل جهاز جهاز مزيل رجفان القلبAED، وتحليل الإيقاع، وتثبيت الأقطاب الكهربائية، وإعطاء صدمة للمريض د. تشغيل جهاز جهاز مزيل رجفان القلبAED ، وإعطاء صدمة للمريض، وتثبيت الأقطاب الكهربائية، وتحليل الإيقاع
يشير جهاز AED (جهاز مزيل رجفان القلب) إلى أنه مستحسن توجيه صدمة. ما هي الخطوة التالية؟ أ. الإبتعاد عن المريض ب. تقديم دقيقتين إضافيتين من الإنعاش القلبي الرئوي قبل توجيه الصدمة ج. التهوية أثناء توجيه الصدمة د. افتراض خطأ وعدم توجيه الصدمة
النسبة الصحيحة ل اعطاءالنفس مقابل الضغط على الصدر للبالغين -2/30

2/15 **5/50** **Don’t know**
أين يجب محاولة فحص النبض في البالغين؟ **أ. الشريان الزندي في المرفق** **الشريان السباتي ب. في الرقبة** **ج. الشريان الركبي** **د. الشريان الصدغي في الراس**
المقاطعة او التوقف عن الضغط على الصدر يجب ان تكون الى اي حد من الوقت ؟ ○ **اقل من دقيقة واحدة** ○ **اقل من 10 دقائق** ○ **اقل من 10 ثواني** ○ **لا اعلم**
عندما يكون المنقذ غير متمرس او تم تمرينه لكنه غير محترف في عملية الانعاش القلبي الرئوي اي من الافعال الاتية هي الاهم ؟ ○ **الضغط على الصدر** ○ **تفقد التنفس** ○ **تنضيف المجرى التنفسي من اي عائق** ○ **لا اعلم**

Part -4 attitudes towards cardiopulmonary resuscitation:

السؤال المطروح	اوافق بشدة	اوافق	محايد	لا اوافق	لا أوافق بشدة
اذا تعرض احدهم الى نوبة قلبية ساقوم بعمل انعاش قلبي رئوي					
في الحياة اليومية من المهم المعرفة باساليب تنفيذ عملية الانعاش القلبي					
يجب ادخال عملية الانعاش القلبي الى المدراس و المناهج الدراسية					
تعلم الانعاش القلبي صعب ولذلك يجب عدم تعليمه الى طلاب المرحلة الثانوية					
انقاذ الحياة فقط يقتصر على الطواقم الطبية ولا احد اخر					
اذا كانت لدي المعرفة الكافية استطيع تنفيذ عملية الانعاش القلبي على اي شخص بحاجة لذلك					

اذا كان الشخص احد افراد العائلة فذلك يحفزني اكثر لانفذ عملية الانعاش القلبي عليه					
أعتقد أن إجراء الإنعاش القلبي الرئوي مهم ويمكن أن يزيد من فرص البقاء على قيد الحياة للمرضى.					
أود تعلم وممارسة الإنعاش القلبي الرئوي.					
إذا كنت أملك معرفة ومهارات كافية في الإنعاش القلبي الرئوي، فسأقوم بتنفيذ الإنعاش للأشخاص الذين يحتاجون إليه.					
ليس من الضروري ان احصل على المعرفة بخصوص عملية الانعاش القلبي الرئوي					

Appendix # 5: IRB Approval

Arab American University- Palestine
Deanship of Scientific Research
IRB committee
Tel: 04-241-8888, ext 1196
E-mail: irb.aaup@aaup.edu

الجامعة العربية الامريكية- فلسطين
عمادة البحث العلمي
لجنة أخلاقيات البحث العلمي
تلفون: 1196 04-241-8888 ext
البريد الالكتروني: irb.aaup@aaup.edu

IRB Approval Letter

Study Title: CPR Knowledge and Attitudes among High School Students Age (16 – 18) in the Southern area's of Palestine, a Cross-Sectional Study

Submitted by: Nirmin Jameel Ahmad Abu Khairan

Date Received: 10th July 2023

Date Reviewed: 06th September 2023

Date Approved: 05th October 2023

Your Study titled "**CPR Knowledge and Attitudes among High School Students Age (16 – 18) in the Southern area's of Palestine, a Cross-Sectional Study**" With archived number 2023/A/139/N was reviewed by the Arab American University IRB committee and was approved on 05th October 2023.

Ahmad Ayed, PhD
IRB Committee Member
Arab American University of Palestine

Sajed Ghawadra, PhD
IRB Committee Vice-chairman
Arab American University of Palestine

Reham Khalaf-Nazzal, MD, PhD
IRB Committee Chairman
Arab American University of Palestine

General Conditions:

1. Valid for 8 months from date of approval.
2. It is important to inform the committee with any modification of the approved study protocol.
3. The committee appreciates a copy of the research when accomplished.

لجنة أخلاقيات البحث العلمي في الجامعة العربية الامريكية

IRB at Arab American University

الملخص

الخلفية: يُعد الإنعاش القلبي الرئوي (CPR) تقنية بالغة الأهمية لإنقاذ الحياة، إلا أن الوعي به وفهمه بين طلاب المرحلة الثانوية غالبًا ما يكونان غير كافيين. تهدف هذه الدراسة إلى تقييم المعرفة والمواقف تجاه الإنعاش القلبي الرئوي بين طلاب المرحلة الثانوية الذين تتراوح أعمارهم بين 16 و18 عامًا في مدينة الخليل، الواقعة في المناطق الجنوبية من الضفة الغربية.

المنهجية: أجريت دراسة مقطعية على عينة من 380 طالبًا وطالبة من مدارس مختلفة في مدينة الخليل. تم اختيار المشاركين باستخدام أسلوب أخذ العينات العشوائية الطبقية. جُمعت البيانات من خلال استبيان مُنظم، قيّم معرفة الطلاب بإجراءات الإنعاش القلبي الرئوي، ومواقفهم تجاه تعلمه وإجراءه، وثقتهم المُتصورة في إجرائه في حالات الطوارئ.

النتائج: كشفت النتائج أنه على الرغم من أن نسبة كبيرة من الطلاب قد سمعت عن الإنعاش القلبي الرئوي، إلا أن المعرفة التفصيلية بالإجراءات والتقنيات الصحيحة كانت محدودة. لم يتمكن سوى 30% من المشاركين من تحديد خطوات الإنعاش القلبي الرئوي بشكل صحيح، وتلقى أقل من 20% منهم تدريبًا رسميًا. كانت المواقف تجاه الإنعاش القلبي الرئوي إيجابية بشكل عام، حيث أعرب 75% من الطلاب عن استعدادهم لتعلم وإجراء الإنعاش القلبي الرئوي إذا تلقوا التدريب المناسب. ومع ذلك، كان هناك نقص ملحوظ في الثقة، حيث شعر 25% فقط من الطلاب بالقدرة على إجراء الإنعاش القلبي الرئوي في حالات الطوارئ الفعلية.

الاستنتاجات: تؤكد الدراسة على الحاجة الماسة لبرامج تعليمية شاملة للإنعاش القلبي الرئوي في المدارس الثانوية في مدينة الخليل. إن دمج التدريب على الإنعاش القلبي الرئوي في المناهج الدراسية وتنظيم ورش العمل من شأنه أن يُحسّن بشكل كبير من معرفة الطلاب وثقتهم بأنفسهم. تُعد هذه الجهود ضرورية لتزويد الشباب بالمهارات اللازمة للاستجابة بفعالية في المواقف التي تُهدد الحياة، مما قد يُسهم في إنقاذ الأرواح.

الكلمات المفتاحية: الإنعاش القلبي الرئوي، طلاب المدارس الثانوية، حالات الطوارئ، المناهج الدراسية، تدريب الشباب.