An-Najah National University

Faculty of Graduate Studies

Evaluation of Primary Health Care Physicians' and Nurses' performance for WHO PEN protocol for cardiovascular diseases applied in Salfit district, Palestine.

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Dedication

To My Family,

For their abundant support,

For their patience and understanding,

And for their love

My parents

My brothers and sisters,

My husband,

My beloved unborn baby

And my friends.

Sanabel Afana

Acknowledgment

First and last, all thanks and phrases to God (Allah) for his support and blessing on me to complete this study.

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Last but not the least; I would like to thank my family: my parents for their endless guidance, support and encouragement.

الاقرار

أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان :

Evaluation of Primary Health Care Physicians' and Nurses' performance for WHO PEN protocol for cardiovascular diseases applied in Salfit district, Palestine.

أقر بان اشتملت عليه هذه الرسالة هي من نتاج جهدي الخاص باستثناء من تمت الإشارة إليه حيثما ورد، وان هذه الرسالة ككل أو إي جزء منها لم يقدم من قبل لنيل درجة أو لقب علمي أو بحثي لدى إي مؤسسة تعليمية أو بحثية أخرى.

Declaration

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's Name: **اسم الطالب:**

Signature: **التوقيع:**

Date: **التاريخ:**

List of Abbreviations

CVDs	Cardiovascular Diseases
WHO	World Health Organization
PEN	Package of Essential Non-Communicable diseases intervention
PHC	Primary Health Care
NCD	Non-Communicable Diseases
ISH	International Society of Hypertension
FGD	Focus Group Discussion
LLD	Lipid-lowering drug
HCWs	Health Care Workers
LDL-C	Low Density Lipoprotein-cholesterol
BP	Blood Pressure
BG	Blood Glucose
MOH	Ministry of Health
ANU	An-Najah University

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Abstract

Background: Palestinian ministry of health is planning to adopt PEN protocol (package of essential non communicable disease (NCD) intervention) which aims to help low resource countries to address NCD prevention and control strategies within primary health care clinics; the first step was to apply the protocol as pilot in Salfit district.

Objective: This study aims to evaluate WHO PEN protocol implementation in Salfit district by assessing knowledge, attitude and performance of physician and nurses who received training on protocol, assessing the completeness and documentation of new patient file records, in addition to assessing the barriers for implementation of the protocol from two points of view (participant and program holder).

Methodology: The multistage evaluation included a well developed questionnaire to assess knowledge and attitudes in physician and nurses, direct observation of health workers' performance, reviewing the

completeness of patient records and three in depth focus group discussions to assess barriers for implementation.

Result: Majority of the participants expressed good level of knowledge regarding the protocol principles, most of them believed the protocol is important and beneficial but they mainly suggested increasing the number of staff working in PHC clinics. Their performance is considered being acceptable in general. The reviewed patient files showed good documentation of file components. The main barriers identified were workload, lack of clear responsibilities and shortage of medications from participants' view, while lack of interest and motivation among HCWs and long time period between training and implementation were identified as the main barriers from program holder's point of view.

Conclusion: Although the training course helps in improving participants knowledge there is a need to increase the practical elements within the training course to improve protocol implementation.

Chapter One

I. Introduction

This chapter will present in brief an introduction about the cardiovascular diseases burden, PEN protocol, training course in Salfit and evaluation for health intervention.

1.1 Cardiovascular diseases burden:

Cardiovascular diseases (CVDs) are the major causes of death globally; more people die annually from CVDs than from any other cause. Approximately 17.3 million people died from CVDs in 2008, representing 30% of all global deaths. Over 80% of CVD deaths occur in low- and middle-income countries and occur almost equally in men and women. By 2030, almost 25 million people will die from CVDs, mainly from heart disease and stroke, most of the cardiovascular diseases can be prevented by addressing risk factors such as tobacco use, unhealthy diet and obesity, physical inactivity, raised blood pressure, diabetes and raised lipids [1].

According to WHO data, an estimated 1 billion people across the world are now overweight or obese. The worldwide trend is due in part to the increasing westernization of many traditional diets—fruits, vegetables, and whole grains are being replaced by calorie-dense, easily accessible foods that are high in saturated fat, sugar, and refined carbohydrates. Obesity is as much a problem for low-income countries as it is for more wealthy

countries. A one percent increase in the prevalence of obesity in such countries as India and China leads to 20 million additional cases of obesity [2, 3].

Obesity is also the result of a decline in physical activity. WHO estimates that 60% of the world population is insufficiently physically active, that contributes to the increase in obesity and diabetes. The trend for inactivity is evident especially in poorer communities. This trend is influenced heavily by cultural patterns, traditions, and the lack of civic organizations to promote the benefits of exercise. In low-income and middle-income countries that previously relied on walking or bicycling for transportation, increasing prosperity has brought an influx of automobiles and public transportation, which most people prefer not only for convenience but also as demonstration of status, which further contributes to inactivity. In Palestine sedentary life style and obesity are highly prevalent, about 71.3% of women and 58.7% of men suffer from obesity and overweight and these numbers are expected to increase during the next decade [4].

Tobacco consumption is also increasing throughout the world. Excess mortality from cardiovascular disease and stroke is 2-fold to 3-fold higher among smokers compared with non-smokers. It is estimated that the number of individuals who smoke will increase by 500 million throughout the world in the next quarter century. Data from Palestine in 2006 showed the prevalence of smoking (age >10 years) to be 34.7% among men and 2.1% among women [4]. According to the available data about smoking

practices for the year 2010, 22.5% of persons aged 18 years and above in the Palestinian Territory are reported as smokers [5].

Overweight, obesity, tobacco smoking and physical inactivity also contribute to the global burden of hypertension, the major risk factor for stroke and an important independent contributor to coronary heart disease, chronic heart failure, and other cardiovascular diseases. Hypertension is estimated to affect more than a third of adults aged 25 and above, accounting for about a billion people worldwide and contributes to nearly 9.4 million deaths from cardiovascular diseases each year [6]. In 2006, the rate of reported hypertension in Palestine was 8.1% at age 40–49 years, 22.6% at 50–59 years, and 35.2% at 60 years and older [4]. In 2013, a study showed that the overall prevalence of hypertension in Palestine was 27.6%, with a higher percentage among men [7].

Diabetes presently affects 150 million individuals worldwide, and its prevalence, especially among younger people, is expected to double in the next 25 years. The 300 million diabetics in 2025 will represent 5.4% of the world's population [3, 8]. In Palestine, according to data in 2000, the estimated prevalence rate of diabetes was 9·0% in adults aged 30 years and older [4].

The high burdens of CVD in the developing countries are attributable to urbanization and high prevalence of the main CVDs risk factors such as smoking, unhealthy diet, obesity, diabetes, dyslipidemia and hypertension,

the relatively early age at which they manifest, the large sizes of the population, and the high proportion of individuals who are young adults or middle-aged in these countries. For example, about half of the deaths attributable to CVD in the developing countries in 1990 occurred below the age of 70 years, in contrast to about a quarter in the developed countries. Such a pattern of premature CVD mortality is likely to haunt the developing countries even more in the future. Between 1990 and 2020, the increase in ischemic heart disease (IHD) mortality (120% in women and a 137% in men) in the developing countries is expected to be much greater than among developed countries (29% and 48%, respectively) [8,9].

Although there are a number of factors that contribute to the growing cardiovascular health crisis, a message that must be provided clearly and definitely is that much of the death and disability from heart disease and stroke is preventable; this public health message must be heard by governments, healthcare providers, and the public [3].

For that, to control for CVDs burden, low and middle income countries require coordinated and preventive strategies using integrated approach to manage all risk factors and early detection of people with high risk using the limited resources they have.

1.2 PEN protocol:

The WHO provided Package of Essential Non-Communicable (PEN) diseases interventions for primary health care (PHC) in low resource settings. PEN defines a minimum set of essential NCD interventions for any country that wishes to initiate a process of universal coverage reforms to ensure that health systems contribute to health equity, social justice, community solidarity and human rights. PEN components include protocols for clinical diagnosis and treatment, tools for risk prediction of heart attacks and strokes (WHO/ISH risk prediction charts), guidance on minimum requirements for essential medicines and affordable technologies, and essential recording tools.

Implementation of the package will help strengthen primary care to address NCD prevention and control through identification of people at risk of NCDs and those with NCDs; better quality of diagnosis, case management and follow-up; Support for adherence and change of health-related behavior and strengthening the health management information system for NCD prevention and control.

Also Implementation of the package expresses benefits to the health staff working through increase motivation, skills and competence; applying the experience gained in case management of major NCDs to other NCDs and strengthen the connections between health workers at the first level health facilities and medical professionals at the first referral level [10].

1.3 Training course in Salfit:

According to the Palestinian Ministry of Health (MOH), cardiovascular diseases account for 22.4% of all deaths in 2011, being the leading cause of death in Palestine for the last two decades [11]. CVDs and stroke are major causes of illness, disability and death in Palestine, which leads to an increase in personal, community and health costs; either high direct cost of care or high indirect cost in loss of production [4].

Palestine is the second country, after Sri Lanka in implementing the WHO PEN protocol, Salfit district was chosen to be the first site for implementation of this protocol; doctors and nurses who work in PHC clinics received training on this protocol, as a part of training program; their performance should be evaluated after the training course.

The training for WHO PEN protocol in Salfit district was conducted in September/October 2012, where 49 health care workers (HCWs); 20 doctors and 29 nurses who work in PHC clinics received the training in central PHC clinic in Salfit. They were divided into two groups and each group received eight days course training which included lectures, group discussion, case studies and role play about CVD risk factors, importance of integrated approach, definition of PEN protocol and its main components. HCWs were trained how to use of WHO/ISH risk prediction charts, how to apply the protocol action steps for each patient case and how to provide health education and counseling to stop smoking, and how to

counsel patients about regular physical activity and eating healthy diet [12,13]. I attended a full 8 days training course for the first group, which helped me in clear understanding for the protocol principles, components and steps for implementation.

1.4 Evaluation for health intervention:

Program evaluation is defined as “the systematic gathering, analysis and reporting of data about a program to assist in decision making” [14]. It is a process of determining the value or worth of something by judging it against explicit, predetermined standards [15]. Others define it as a set of tools that are used to measure the effectiveness/ impact of a program, identify ways to improve a program and assess the efficiency of a program (cost-benefit analysis) [16].

There are three levels of evaluation for health intervention; Process evaluation that covers all aspects of the process of delivering a program. It is used to supervise and document program implementation and can help in understanding the relationship between specific program elements and program outcomes. Impact evaluation is used to measure the immediate effect that health interventions have on people, stakeholders and settings to influence the determinants of health; it usually corresponds with the measurement of the intervention objective. Outcome evaluation is linked to assessing the endpoint of interventions expressed as outcomes such as

mortality, morbidity, disability, quality of life and equity; this usually corresponds to the intervention goal [17, 18, 19].

Impact evaluation assesses the effects of an intervention on its immediate achievements, which can be classified generally into behavioral or non-behavioral dimensions. The behavioral dimensions are usually changes in awareness, attitudes, knowledge, skills and behavior among project recipients. Non-behavioral achievements will focus on the achievements in organizational and policy changes. Impact evaluation tends to be the more popular choice of evaluation because it is easier to do, less costly and less time consuming than outcome evaluation [18, 20].

1.5 Significance of the study:

Cardiovascular diseases are the main leading causes of death in Palestine which contributed to 22.4% of total death in 2011 [11]. CVDs also resulted in a high direct cost of care, high indirect cost in loss of production, and much societal stress [4, 21]. As Palestine is a low resources country, WHO PEN protocol can be applied to assess risk for CVD which might help decreasing burden and cost of CVD [10]. The Palestinian Ministry of Health decided to apply this protocol first on PHC clinics of Salfit district as a pilot site. Evaluation is considered an important part for any health program [22]; because it helps to determine the effectiveness of such program and helps decision makers to take the right decision to continue program implantation, change program, or end the program [23, 24].

Evaluation for protocol applied on Salfit is very important step in making a decision to continue applying the protocol on the rest of West Banks' PHCs.

1.6 Objectives:

The main objective is to evaluate WHO PEN protocol implementation in Salfit district.

Specific objectives

1- To observe the performance of PHC physicians and nurses, for WHO PEN protocol in Salfit district using check list for the main components.

2- To assess the knowledge of CVD and PEN protocol principles among physicians and nurses who received training for the protocol in Salfit district.

3- To assess attitude regarding PEN protocol among physicians and nurses who received training for the protocol in Salfit district.

4- To check completeness and documentation of protocol components in new patient files.

5- To assess the barriers for protocol implementation from two point of view (program holder and program participants).

Chapter Two

II.Literature review

Evaluation studies have been used by several countries in the Middle East. One of these studies conducted in Iraq aimed to evaluate the delivery of a ten day interactive training program to 20% of primary care centers across Iraq, the objective of this program was to integrate mental health into primary care in order to increase population access to mental health care. Using multistage evaluation which included a pre- and post-test questionnaire to assess knowledge, attitudes and practice in health workers drawn from 143 health centers, a course evaluation questionnaire in a random sample of 41 clinics, and direct observation of health workers skills, comparing health workers who had received the training on program with those from the same clinics who had not received the training. Three hundred and seventeen health workers participated in the training, which achieved an improvement in test scores from 42.3% to 59%. Trained health workers were observed by research psychiatrists to have a higher level of excellent skills than the untrained health workers. The two weeks course has thus been able to achieve significant change, not only in knowledge, but also in subsequent demonstration of trained practitioners' practical skills in the workplace [25].

A randomized controlled trial study conducted in South Korea aimed to examine the effectiveness of HAHA (Healthy Aging and Happy Aging)

program, which is an integrated health education and exercise program for community-dwelling older adults with hypertension. Older adults with hypertension from one senior center were randomly allocated to experimental (n = 18) or control group (n = 22). Experimental group received health education, individual counseling and tailored exercise program for 12 weeks. After the intervention, systolic blood pressure of experimental group was significantly decreased than that of control group. The HAHA program was effective in control of systolic blood pressure and improving self-efficacy for exercise and health-related quality of life [26].

Another study conducted in Cyprus to assess the level of cardiovascular risk in patients with known risk factors for CVD by applying the SCORE risk function and to study the implications of European guidelines on the use of treatment and goal attainment for blood pressure (BP) and lipids in the primary care of Cyprus. Retrospective chart review of 1101 randomly selected patients with type 2 diabetes mellitus (DM2), or hypertension or hyperlipidemia in four primary care health centers. The SCORE risk function for high-risk regions was used to calculate 10-year risk of cardiovascular fatal event. Most recent values of BP and lipids were used to assess goal attainment to international standards. Most updated medication lists were used to compare proportions of current with recommended antihypertensive and lipid-lowering drug (LLD) users according to European guidelines. The results showed that implementation of the SCORE risk model labeled overall 39.7% of the study population as high

risk individuals (CVD, DM2 or SCORE ≥5%). The SCORE risk chart was not applicable in 563 patients (51.1%) due to missing data in the patient records, mostly on smoking habits. The Low Density Lipoprotein-cholesterol (LDL-C) goal was achieved in 28.6%, 19.5% and 20.9% of patients with established CVD, DM2 (no CVD) and SCORE ≥5%, respectively. BP targets were achieved in 55.4%, 5.6% and 41.9% respectively for the above groups. There was under prescription of antihypertensive drugs, LLD and aspirin for all three high risk groups. This study demonstrated suboptimal control and under-treatment of patients with cardiovascular risk factors in the primary care in Cyprus. Improvement of documentation of clinical information in the medical records as well as GPs training for implementation and adherence to clinical practice guidelines are recommended [27].

A qualitative study conducted in Argentina aimed to identify the main barriers to preventing cardiovascular disease and implementing clinical practice guidelines in primary care. Were decision makers, health professionals, and staff from five primary health care centers, interviewed to identify the main barriers. The results show that the main identified barriers were lack of awareness of guidelines and lack of knowledge about preventing cardiovascular disease, communication problems within health teams, lack of motivation, and organizational problems. The main barriers identified were useful in designing a tailored intervention [28].

In Lebanon a study conducted to evaluate implementation of mental health program on primary health care clinics, about 152 PHC providers (doctors, nurses and social workers) were trained in the identification, management and referral of people with mental health problems, a training includes: 12 theoretical training days, and a minimum of three on-the-job, supervised clinical sessions. Trainees completed pre/post tests, and clinical skills were evaluated during the job supervision sessions. Trainees showed an average of 12-25% improvement in knowledge, and 85% doctors and 91% nurses met minimum competency standards. Results from the evaluation were used to address challenges, including: strengthening referral mechanisms; tailoring training for different groups of professionals; providing refresher training on topics such as medication management and planning longer term follow-up [29].

Other study conducted in Egypt to assess family physicians' knowledge, attitude, practice and performance concerning holistic management of hypertensive patients. The study included all family physicians working in 5 family medicine facilities (n=27) in Alexandria Governorate. A questionnaire was designed to assess their knowledge, attitude and practice, an observation checklist was designed to check their performance with hypertensive patients. The study showed that male physicians had better knowledge than females. None of the physicians had negative attitude towards holistic care for hypertensive patients, while male physicians had better practice level than females (81.8%, 62.5% respectively). Continuing

medical education and training are recommended to increase family physicians' competency and help them to develop the necessary skills [30].

Chapter Three

III.Methodology

In this chapter I present the research design and steps utilized to reach the study goal including; study setting, study design, study population and sampling method, definition of the study variables, instruments of data collection, data analysis and ethical issues.

3.1 Study Design and setting:

It is a mix quantitative and qualitative evaluation study:

- Quantitative evaluation: a cross sectional non-interventional descriptive study was conducted to:

- Assess knowledge and attitude of physicians and nurses regarding the PEN protocols.
- Observe the practice of physicians and nurses regarding the PEN protocols.
- Assess new patients' files completeness.

- The qualitative evaluation: three focus groups conducted to assess HCWs barriers for protocol implementation.

The study was conducted in Salfit district, a Palestinian city in the central West Bank, which has 17 primary health care clinics where three of

these clinics were excluded because they were joint clinics with nongovernmental organizations.

3.2 Study population:

The population of the study includes:

- Doctors and nurses working in primary health care clinics in Salfit district
- New patients' files record provided by PEN protocol in Salfit district.
- WHO expert and MOH partner who were involved in the protocol implementation in Salfit district.

3.3 Study sample:

For the first, second and third objectives: 20 doctors and 29 nurses working in primary health care clinic in Salfit district, who received training on WHO PEN protocol, were approached to participate in the study.

For the fourth objective; a systematic random sample of new patient record files was selected.

For the fifth objective; a convenient sample of doctors and nurses who received training for PEN protocol were interviewed. Other convenient sample of WHO and MOH partner involved in the protocol implementation were interviewed.

3.4 Exclusion criteria:

Any physician or nurse who did not receive training on the protocols; a list for the names of doctors and nurses who work in PHC clinics in Salfit were obtained before data collection to match with list of HCWs who received training on PEN protocol. One nurse was excluded because she did not receive the training (she was at maternity leave)

Any file filled by HCW who did not receive training for the protocol was excluded; the program holder informed that no file can be filled by untrained HCWs.

3.5 Study variables:

Independent Variables:

- Socio-demographic information: Age (continuous), gender (nominal either male or female), and occupation (nominal either doctor or nurse).

- Education and experience: scientific degree (categorical), years of working experience in PHC clinics (continuous), training courses for NCDs (categorical), and number of training courses (continuous).

Dependent Variables:

- Knowledge score regarding the protocol (continuous).

- Attitude score regarding the protocol (categorical).

- Completeness of file record (categorical); complete vs. incomplete.

- Performance of HCWs for the protocol actions observed using check list (done vs. not done); (categorical).

For qualitative data which represent the barriers for implementation of the protocol it is presented as text narratives.

3.6 Data collection tools:

An anonymous self-reported questionnaire (Annex 1) was built up by the researcher as a tool for assessing knowledge and attitude of HCWs regarding the PEN protocol. It was prepared according to the non-communicable diseases training curriculum that was used in the protocol training [12].

The questionnaire consisted of three main domains, with a 24 close ended questions and 2 open ended questions, i.e., demographic characteristics of the participants (gender, age, years of experience in PHC clinics, scientific degree, training courses for NCD), HCWs knowledge regarding PEN protocol, and HCWs attitude regarding the protocol.

The first copy of the questionnaire was in English, and after translation it was reviewed by experts in NCDs from An-Najah University (ANU), MOH and WHO in Palestine. Then it was pre-tested with a convenient sample of 10 candidates of physicians and nurses worked in PHC clinics in Jenin district, to ensure the clarity, time, and ease of administration.

Each question in knowledge section was given one point for scoring except for questions 6,12,15 and 16 which were given two points for each, the total score for this section was 20 scores, their knowledge was classified as good, satisfactory and poor depending on the total score. If score was ≥70% (14-20), it was considered as good, if score was 50-69% (10-13) it was considered as satisfactory and if score was less than 50% (<10) it was considered as poor [31]. The response for attitude section questions was on a five-point Likert-type scale from strongly agree (5) to strongly disagree (1).

A check list containing the main actions listed in the protocol was developed by the researcher (Annex 2); it was used in the observation for HCWs performance regarding the protocol.

A check list was used to check the documentation of the required actions by the protocols and completeness of the patients files (Annex 3). New patients' record file was designed by MOH and local WHO office to document patient's medical information and implementation of PEN protocol components. The sheet was prepared by the researcher according to the actions listed in the protocols.

In order to evaluate these records, a representative sample of records was collected from PHC clinics, a multi-stage sampling technique was used, in the first stage a random selection form PHC clinics to select 7 clinics as a cluster units, in the second stage a systematic random sample (each third

file) from file records was selected to obtain 350 files (Which represents 13% of the total active files at the time of study), the sample size for the file was calculated using Raosoft sample size calculator site. The collective file records from selected clinics was reviewed to check their completeness and documentation of protocol components using well developed check list that contains the main components of the protocol. Quality of documentation is an important issue as patient file is considered an important source of data, especially information from PHC which is used widely in epidemiological and health care quality assessment studies [32, 33].

Check list for essential medications and equipments (Annex 4) needed for applying the protocol was established by the researcher to check the readiness of PHC clinics. This step is considered to be very important since protocol cannot be applied without these essential medications and equipments.

Three focus group discussions (FGDs) were held, to assess the barriers for protocol implementation from two points of view; program holder and program participants. Focus group which is defined as “carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment” has shown to be an effective way to obtain a different range of information in evaluation of research, help understand the ‘why’ behind attitudes and behaviors [34].

The first group includes a convenient sample of six doctors involved in applying the protocols, the second includes a convenient sample of six nurses involved in applying the protocols, and the third includes convenient sample of eight people of representatives of Palestinian MOH, WHO experts and ANU members who involved in protocol implementation.

The first and second group was recruited for a meeting in central primary health care clinic in Salfit; main points for discussion included protocol steps, time, and barriers for implementation.

The third focus group was held in meeting room in central primary health care clinic in Salfit, the discussion focused on implementation flow, barriers, and suggestion to improve the training course.

All FGDs were voice recorded after the consent of the participants, and were terminated when the discussion sufficiently covered the topic and no new information was emerging.

3.7 Data collection procedure:

After the Institution Review Board (IRB) approval and ministry of health acceptance was obtained, data collection started in the form of daily visits to 14 primary health care clinics in Salfit district in the period between16/6/2013 to 23/7/2013. Prior to data collection two field visits were conducted to PHC clinics in Salfit in order to prepare data collection plan in line with the work flow. Each clinic has a doctor’s room and a

nurse's room, where I observed the application of PEN protocol in each of these rooms. Some clinics have low work flow which requires more than one visit to assess the performance in such clinics. Every physician and nurse in PHC clinics in Salfit district were observed to assess their performance regarding PEN protocol, covert observation considered a useful tool for assessing health care worker performance a check list contains the main points considered in observation was used. I visited each PHC clinics in Salfit district involved in the study, in the first visit I checked the presence of essential medications and equipments for the protocol implementation using a check list, and I observed the performance of physicians and nurses regarding the protocol, after that I asked them to fill the questionnaire to assess their knowledge and attitude regarding the protocol.

Another visit for the clinic (if it was selected as a cluster unit) was done to check completeness of new patient file records. The recruitment for the focus group took place a week before FGD; the first was with doctors, the second with nurses and the last with program holder (Palestinian Ministry of Health and WHO officer).

3.8 Data Analysis Plan:

3.8.1 Quantitative data analysis

The Statistical Package of Social Sciences (SPSS) version 20 was used for data entry and statistical analysis.

3.8.1.1Descriptive analysis:

All variables were summarized using the mean and standard deviation for continuous variables and frequencies and percentage for categorical variables.

3.8.1.2 Inferential statistics:

Any possible relation between the dependent and independent variables was explored using Chi square test, significance level of 0.05 was considered in this study.

3.8.2 Qualitative data analysis

The data were collected in text narratives and audio records, the data were summarized after reading and listening to each question and transcribe each participant's response, including only the relevant and useful portions of the discussion, the final step was extracting the themes from the summarized data and rewrite the final result in the form of text narrative using quotation marks to indicate that a response is a participant's exact words.

3.9 Ethical consideration:

Official permission from the Institutional Review Board IRB at An Najah National University and ministry of health were obtained before performing the study.

Observation of HCWs performance was conducted in agreement with the head of department, participants were aware of evaluation process in general but did not know they are specifically observed and no names were used. Verbal consent was taken from all participants before filling the questionnaire.

An invitation letters for focus group discussion (Annex 7) was sent to HCWs, and written consent form was obtained before participation. (Annex 8), discussion, text narratives and sound records were used.

Data was collected anonymously and kept confidential; all collected data was used for research purpose.

Chapter Four

IV. Result

4.1 Introduction

The purpose of this chapter is to present study results. Results will be arranged into five main parts, each part will present one of the objectives of the study. The first part presents results related to the knowledge of CVD and PEN protocol principles among physicians and nurses who received training for the protocol in Salfit district. The second part presents the attitude regarding PEN protocol among physicians and nurses who received training for the protocol in Salfit district. The third part presents the performance of PHC physicians and nurses, for WHO PEN protocol in Salfit district. The fourth part presents the completeness and documentation of protocol components in new patient files.

Finally, the fifth part presents the barriers for protocol implementation from two points of view (program holder and program participants).

4.2 Physicians' and Nurses' knowledge of CVD and PEN protocol principles

This part aims to assess the knowledge of the participants, using a well developed questionnaire. From 49 doctors and nurses who received the training for PEN protocol, 42 of them (who work in clinics applying the protocol) filled out the questionnaire; 27 (93%) nurses and 15 (75%)

doctors. Table (1) shows the demographic features of the participants. Male were 23.8% of the participants. The mean age of the study participants was 41.4±1.49, ranging from 26-59 years. For the educational degree, for doctors all have bachelors' degree and one of the nurses has a master degree. Lifetime work experience varied between 1-32 years. About receiving other training courses for NCDs, 34 of the participants (81%) reported that they received training courses.

Table 1: Demographic characteristics of the participants (n =42).

Variable	No	%
Gender		
Male	10	23.8
Female	32	76.2
Age group (yrs)		
20-29	6	14.3
30-39	13	31.0
40-49	11	26.2
50-59	12	28.6
Occupation		
Doctors	15	35.7
Nurses	27	64.3
Years of service		
1-9	17	40.5
10-19	17	40.5
20-29	5	11.9
30-39	3	7.1
Scientific degree		
Diploma	22	52.4
Bachelors	19	45.2
Master	1	2.4

Answers concerning the knowledge of the participants' regarding CVD and PEN protocol principles are reported in Tables 2-4. This section of the questionnaire consists of 16 questions divided into three main domains. The first one is about general knowledge regarding CVD and covered by 6 questions; Q1, Q2, Q3, Q9 and Q15). In this domain, high percent of correct answers were reported among the participants except the question about the most common non-communicable diseases, where only 40.5% of the participants reported the correct answer (Table 2).

Table 2: Frequency distribution of Physicians' and Nurses' correct answers about the general knowledge on CVD.

Questions on	Correct answer	
	N.	*%*
The major NCDs that kills millions of people worldwide.	17	40.5
The most common CVD worldwide.	41	97.6
Example of primary prevention intervention.	40	95.2
Recommendations to be followed to reduce CVD risk.	42	100
The most common behavioural risk factors of CVDs.	37	88.1

The second domain is about knowledge regarding PEN protocol principles and covered by 6 questions; Q7, Q8, Q10, Q11, Q13 and Q14. In this domain, 100% of the participants reported correct answer for question about advices for the diabetic patient about foot care, however only 38.1% of them reported correct answer regard heart healthy diet (Table 3).

Table 3: Frequency distribution of Physicians' and Nurses' correct answers about the knowledge on PEN protocol principles.

Questions on	Correct answer	
	N.	%
The Role of nurse in PHC.	34	81.0
The Patients to be referred to the second level of care.	26	61.9
Hypertensive patients who should receive anti-hypertensive therapy.	27	64.3
The advice for the diabetic patient about foot care.	42	100
Heart healthy diet.	16	38.1
Target people that PEN protocols will be applied for.	37	88.1

The last domain is about knowledge regarding risk prediction chart. It is covered by 5 questions; Q4, Q5, Q6, Q12 and Q16. Two case scenarios were presented to the participant and they were asked to calculate the cardiovascular risk. About 52.4%, 64.3% of the participants reported correct answers for calculating the risk for case scenario (1) and case scenario (2) respectively, only 47.6% of the participants described the steps for using prediction chart correctly (Table 4).

Table 4: Frequency distribution of Physicians' and Nurses' correct answers about the knowledge on risk prediction charts

Questions on	Correct answer	
	N.	%
The risk factors needed for cardiovascular risk assessment.	30	71.4
The type of risk prediction chart need to be used.	42	100
The 10-year risk of suffering a heart attack/stroke (Case scenario 1)	22	52.4
The 10-year risk of suffering a heart attack/stroke (Case scenario 2)	27	64.3
The steps for using WHO/ISH risk prediction charts.	20	47.6

The total score for participants ranged from 8 to 20, the mean was 14.42 [SD2.6]. Their knowledge was classified as good, satisfactory and poor depending upon the score. If score ≥70% (14-20), it was regarded as good, if score was 50-69% (10-13) it was regarded as satisfactory and if score was less than 50% (<10) it was regarded as poor.

Figure (1) shows the distribution of knowledge level among participants, about (64.3%) of the participants reported good knowledge and only 4.75% have poor knowledge.

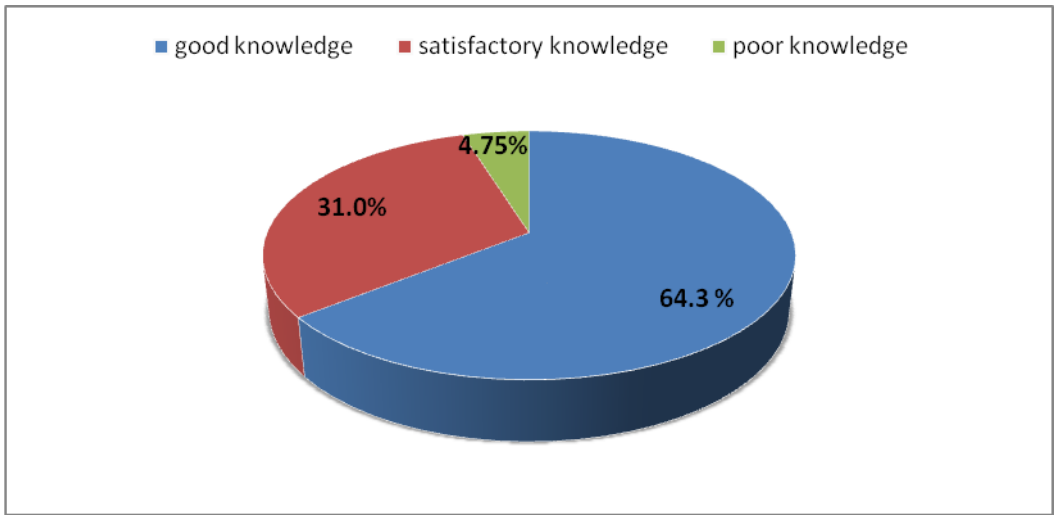

Figure 1: Frequency distribution of knowledge classification among participants**.**

Chi square test and in some variables Fisher exact test was used to assess the relation between demographic characteristics and knowledge level. Table 5 shows that difference in knowledge between males and females was not statistically significant (P-value=0.49). According to occupation, about 73% of doctors and 59% of nurses have good level of knowledge but this difference is not statistically significant (P-value=0.29). More participants with diploma degree reported good knowledge compared to bachelors and master degree (P-value=0.38). 71.4% of participants in the age group (30-40 years) reported good knowledge, 29.4% of participant with years of experience group (<10 years) reported satisfactory knowledge.

Table 5: Relation between demographic factors and knowledge level for the participants.

Demographic factors	Good knowledge N (%)	Satisfactory knowledge N (%)	P-value
Gender **Male** **Female**	7 **(70.0)** 20**(62.5)**	3 **(30.0)** 12**(37.5)**	0.49*
Occupation **Doctor** **Nurse**	11**(73.3)** 16 **(59.3)**	4**(26.3)** 11**(40.7)**	0.29*
Educational level **Diploma** **Bachelors** **master**	14(63.6) 13(68.4) 0 (00.0)	8(36.4) 6(31.6) 1 (100)	0.38
Age **<30** **30-40** **>40**	5 (83.3) 10 (71.4) 12 (54.5)	1(16.7) 4(28.6) 10 (45.5)	0.34
Years of experience **<10** **10-20** **>20**	12(70.6) 10 (58.8) 5(62.5)	5(29.4) 7(41.2) 3(37.5)	0.77
Training **Yes** **No**	23(67.6) 4 (50.0)	11(32.4) 4 (50.0)	0.29*
Significantly different p<0.05, Chi-square test was used for most variables. ***fisher exact test was used.**			

In summary physicians and nurses' express good level of knowledge they scored less on protocol principles compared to general CVD knowledge part of the questionnaire. The data showed no statistically significant differences in participants' demographic characteristics with their level of knowledge.

4.3 Physicians' and Nurses' attitude regarding PEN protocol

This section represents the result for participants' attitude regarding PEN protocol; responses of participants to attitude questions are shown in tables (6). About 54.8 % of participants agree that protocol steps are too much work to do, only 38.1% of them think that this protocol distributes the task among HCW in a fair and proper way, majority of participants (97.6%) believed that PEN protocol will strengthen PHC to address NCD prevention through identification of people at risk. About two-third thought that the differences between the HCW in work experience will affect application of protocol negatively.

Table 6: Distribution of Physicians' and Nurses' answers on their attitudes regarding PEN protocols.

Item	Strongly Agree /Agree N (%)
The steps needed to apply the protocol are too much	23 (54.8)
The differences between the HCW in work experience will affect application of protocol negatively	26 (61.9)
There is a need for more training courses to apply this protocol	33 (78.6)
Work pressure will not affect the application for PEN protocol	36 (85.7)
There is a need to increase number of a staff working in PHC to apply the protocol in proper way	34 (80.9)
The PHC clinic is a suitable place to apply this protocol	39 (92.9)
The WHO PEN is a cost-effective intervention for prevention and management of NCD	39 (92.9)
Implementation of the package will strengthen PHC to address NCD prevention through identification of people at risk	41 (97.6)
This protocol distributes the task among HCW in a fair and proper way	16 (38.1)
This is a suitable time to apply such protocol in our country	31(73.8)

A comparison between doctors and nurses attitude regarding PEN protocol is shown in table 7, similar percent of doctors and nurses (60%, 63% respectively) agreed that differences between the HCW in work experience will affect application of protocol negatively. About 85.2% of nurses agree that there is a need for more training courses to apply this protocol while 66.7% of doctors agree with this, but this difference was not statistically

significant (P-value=0.357). Hundred percent of doctors agree that the WHO PEN is a cost-effective intervention for prevention and management of NCD and implementation of the package will strengthen PHC to address NCD prevention through identification of people at risk.

Table 7: Comparison between doctors and nurses attitude towards PEN protocol

Item	Strongly Agree /Agree Nurses N (%)	Strongly Agree /Agree Doctors N (%)	P-value
The steps needed to apply the protocol are too much	16 (59.3)	7 (46.7)	0.210
The differences between the HCW in work experience will affect application of protocol negatively	17 (63.0)	9 (60.0)	0.973
There is a need for more training courses to apply this protocol	23 (85.2)	10 (66.7)	0.357
Work pressure will not affect the application for PEN protocol	24 (88.9)	12 (80.0)	0.733
There is a need to increase number of a staff working in PHC to apply the protocol in proper way	23 (85.2)	11 (73.3)	0.482
The PHC clinic is a suitable place to apply this protocol	25 (92.6)	14 (93.3)	1.00*
The WHO PEN is a cost-effective intervention for prevention and management of NCD	24 (88.9)	15 (100.0)	0.541*
Implementation of the package will strengthen PHC to address NCD prevention through identification of people at risk	26 (96.3)	15 (100.0)	1.00*
This protocol distributes the task among HCW in a fair and proper way	10 (37.0)	6 (40.0)	0.462
This is a suitable time to apply such protocol in our country	20 (74.1)	11 (73.3)	0.585

Significantly different p<0.05, Chi-square test was used for most variables. *fisher exact test was used.

In summary, most of the participants believed in the importance of the protocol and its role in management and prevention of NCDs. Although most of the participants agreed that work pressure can affect the implementation negatively, most of them believed that there is a need to increase number of staff work and provided more training courses for the protocol.

4.4 Physicians' and nurses' Performance on WHO PEN protocol

To assess the completeness and documentation of protocol components in new patient files, the researcher filled out a predesigned check list containing the main procedure actions listed in the protocol, through frequent visits to the clinics and observation of HCWs' performance applying the protocol. All PHC clinics in Salfit district were visited and the performance of doctors and nurses was observed separately.

A total of 97 patients (have eligible criteria to apply protocol for them) contacted the clinics during observation process. The results showed that 44 patient (45.3 %) were asked about smoking, only 25 (25.8 %) of total patients received counselling on tobacco cessation, and only 13 patients (13.4%) were asked about their physical activity. However, 49 patients (50.5%) were counselled on physical activity. Surprisingly, neither of the patients were asked about alcohol habit nor received counsel on stopping alcohol.

Most of patients seen by PHC physicians (27/29) were assessed for the 10 years cardiovascular risk using the WHO/ISH prediction charts. On the other hand, only 18 patients were counselled on their medication. Tables 8, 9 show the performance of doctors and nurses.

Table 8: Frequency distribution of physician performance.

Items to be asked about by physician	Done by physicians (29) N (%)
Medication	17 (58.6)
Chest pain	0 (00.0)
Heart disease	15 (51.7)
Kidney disease	0 (00.0)
Actions to be taken by physician	
Counsel on waist circumference value.	2 (6.90)
Counsel on Blood pressure	24 (82.8)
Counsel on Fasting or random blood glucose value.	17 (58.6)
Urine protein	0 (00.0)
Counsel on Plasma cholesterol value.	9 (31.0)
Auscultation heart or lung	1 (3.40)
Palpitation of heart	1 (3.40)
Sensation of feet	2 (6.90)
Using risk prediction chart	27 (93.1)
Apply protocol according to risk value	4 (13.8)
Counsel on medication	9 (31.0)
Counsel on diet	6 (20.7)
Counsel on physical activity	4 (13.8)
Counsel on tobacco cessation	1 (3.40)
Counsel on stopping alcohol	0 (00.0)

Table 9: Frequency distribution of nurses' performance.

Items to be asked about by nurses	**Done by Nurses(68)**	
	N.	**(%)**
Smoking	44	(64.7)
Alcohol	0	(00.0)
Occupation	14	(20.6)
Physical activity	13	(19.1)
Actions to be taken by nurses		
Measuring Waist circumference	64	(94.1)
Measuring Blood pressure	67	(98.5)
Recording Fasting or random blood glucose value.	47	(96.1)
Urine protein	0	(00.0)
Recording Plasma cholesterol value.	40	(58.8)
Counsel on medication	9	(13.2)
Counsel on diet	49	(72.1)
Counsel on physical activity	45	(66.2)
Counsel on tobacco cessation	24	(35.3)
Counsel on stop alcohol	0	(00.0)

In summary the performance of physicians and nurses was acceptable for some tasks and poor in others. Using the prediction chart was good among physicians, and measuring blood pressure was very good in nurses; however counseling on tobacco cessation and on medication was relatively low among the participants.

It is important to assess the readiness of clinics to implement the protocol in proper way. Tables (10, 11) shows the presence of essential medications and equipment in14 PHC clinics which were involved in the study. All clinics were found to have the essential equipment except for peak flow meter and spacer for inhaler which were not found in any of the clinics, about 8 clinics have a laboratory to perform blood glucose test. Most of medications were available in the clinics except for Glyceryltrinitrate, Ibuprofen, Codeine, Magnesium sulphate, Senna and Glucose inject able solution which was not found in any of the clinics, and morphine was found only in the central clinic.

Table 10: frequency distribution of essential equipment in 14 PHC clinics.

Equipment	# of clinics found in (Total 14)
Thermometer	14
Stethoscope	14
Blood pressure measurement device	14
Measurement tape	14
Weighing machine	14
Peak flow meter	0
Spacers for inhalers	0
Glucose laboratory test	8
Glucometer	2
Blood glucose test strips	2
Urine protein test strips	10
Urine ketones test strips	8

Table 11: frequency distribution of essential medications in 14 PHC clinics.

Medicines	# of clinics found in (Total 14)
Thiazide diuretic	14
Calcium channel blocker (amlodipine)	14
Beta-blocker (atenolol)	14
Angiotensin inhibitor (enalapril)	14
Statin (simvastatin)	14
Insulin	14
Metformin	14
Glibenclamide	14
Glyceryltrinitrate	00
Isosorbidedinitrate	14
Furosemide	14
Spironolactone	14
Salbutamol	14
Prednisolone	14
Beclometasone	8
Aspirin	14
Paracetamol	14
Ibuprofen	00
Codeine	00
Morphine	1
Penicillin	14
Erythromycin	14
Amoxicillin	14
Hydrocortisone	3
Epinephrine	11
Heparin	3
Diazepam	14
Magnesium sulphate	00
Promethazine	14
Senna	00
Dextrose infusion	10
Glucose injectable solution	00
Sodium chloride infusion	14
Oxygen	14

In summary all PHC clinics agreed on the lack of peak flow meter and spacer for inhaler as instruments at PHCs; however they agreed that most of essential medications were found in PHC clinics with minimal differences.

4.5 Documentation and completeness of protocol components in patients' files

The aim of this part is to check the completeness of the new patient file records. A total of 491files were checked for documentation of the protocol components. These files were selected from a randomly chosen seven PHC clinics. Blood pressure was found to be recorded in 98.9% of the files; about 1.8% of them had only one value for blood pressure recorded. Waist circumference was found to be recorded in 93.9% of the files while weight was recorded in 97.6% of them.

Smoking habits were recorded in 95.7% of the files and 80.2% of them had a recorded counselling on tobacco cessation. Blood glucose (BG) value was found to be recorded in 85.1% of files, and about 7.1% of files recorded the BG value only in the first visit of the patients. For cholesterol 81.7% of files recorded its value and 10.4% of file recorded cholesterol value only for first visit. The 10-years cardiovascular risk was recorded in 72.9%of files and about 4.5% recorded different values for the risk for each visit while these cases should have constant value (30%-40% risk value), all in table (12).

Table 12: frequency distribution for recorded items on patient files

Item	Recorded		Recorded on first visit only		Recorded on second visit only	
	N	(%)	N	(%)	N	(%)
Previous medical history	488	(99.4)	_		_	
Family history	480	(97.8)	_		_	
Blood pressure (2 reading)	486	(98.9)	_		_	
Waist circumference	461	(93.9)	6	(1.2)	3	(0.6)
Weight	479	(97.6)	3	(0.6)	_	
Tobacco smoking	470	(95.7)	4	(0.8)	1	(0.2)
Counselling smoking cessation	394	(80.2)	6	(1.2)	_	
Counselling diet	452	(90.1)	3	(0.6)	_	
Counselling exercise	433	(88.2)	4	(0.8)	_	
Blood glucose	418	(85.1)	35	(7.1)	3	(0.6)
Cholesterol	401	(81.7)	51	(10.4)	2	(0.4)
10-Year Cardiovascular Risk	358	(72.9)	15	(3.1)	9	(1.8)
Controlled – Hypertension	421	(85.7)	8	(1.6)	3	(0.6)
Controlled – Diabetes	384	(78.2)	9	(1.8)	5	(1.0)
Foot Examination	357	(72.7)	8	(1.6)	6	(1.2)
Medication	459	(93.5)	_		_	

In summary, the items in the new patients' files were documented in a good percentage, ranging from (99.4%-72.9%); the lowest percentage was for 10-years cardiovascular risk value which is considered one of the most important items in the protocol.

4.6 The barriers for protocol implementation from two points of view (program holder and program participants).

In this part I will present the results for three focus group discussions (FGD) that were held to assess the barriers for protocol implementation.

I. The first FGD was with six of PHC clinic doctors (2 males and 4 females), the session lasted for 57 minutes, and they were asked about the main difficulties that they faced in the implementation of the protocol, most doctors considered PEN protocol as a good program that enriched their knowledge in NCDs and related risk factors, also it improved their skills.

One of the doctors said "I used the prediction chart for my husband and he stopped smoking since 2 months"

Q1: What is your opinion regarding protocol steps?

Most doctors found protocol steps to be heavy work at the beginning, but now it is easy and comfortable, even one of doctors said "I found this is very good and easy to apply from the start" .

Q2: What is your opinion regarding distribution of protocol steps between you and nurses?

The group agreed that it is fair, but some said that they have to check and review nurse's work.

A doctor said "I think nurses can do their work correctly, I did not check their work"

Q3: What are the barriers and difficulties for implementation?

1. Work load was identified as the main obstacle in implementing the program because the protocol implementation needs time which is difficult to do while still seeing patients with other types of visits on daily basis.

These are examples of doctors' responses: "This protocol need special clinics not PHC clinics"

"Sometimes I told the nurses I cannot see more than 20 NCDs patients this day because of work load"

"One of the main objectives of this protocol is to decrease work load, but it is not happening yet"

2. The absence of clear and uniform procedures for case management among doctors is identified as one of the difficulties; the patient can be seen by different doctors each visit to the clinic, which affects confidentiality and continuity of patients' care.

3. Patients were seen by the group as one of the barriers for implementing the protocol, they are usually in a hurry, coming mainly to

the clinic to get their medications ignoring doctors' advices for healthcare such as doing lab tests; this is probably because they did not know the benefits of the program.

4. Most doctors considered shortage of medication as a difficulty because this requires frequent clinic visits by patients every month which puts extra load on doctors as the routine procedure requires doctors to see patients for this type of visits.

One doctor suggested having special doctors and nurses for this protocol to manage the cases properly.

II. The second focus group was conducted with six female nurses, the session took

45 minutes.

Q1: What is your opinion regarding protocol steps?

Most of them found the protocol steps easy and clear especially with new files, one of them said" at the beginning I found the steps to be too difficult but now it is easy"

Q2: What is your opinion regarding distribution of protocol steps between you and doctors?

About the distribution of work between them and doctors, nurses think that this new protocol puts more load on nurses; regarding cooperation between doctors and nurses there were variations, one nurse said" I cooperate with doctors, we complement each other in order to implement this protocol in a

good way", other nurse said "cooperation depends on doctors, some cooperate others don't".

Q3: What are the barriers and difficulties for implementation?

1- All participants considered the amount of work load required to apply the protocol as a difficulty to provide the protocol properly.

"Taking second BP reading after 10 minutes is difficult with heavy work load"

"This protocol increases work load"

2- Patients' compliance also was considered as one of the barriers for implementation; they do not come on time, some patients do not cooperate with nurses.

"One patient asked me to write any value for his BP", also patients are not cooperative with filling out medication procedures set up by the clinic which is affecting their medication regimen.

3- The nurses also viewed lack of laboratory in some clinics as a problem; not all patients can go to other clinics to get their lab test done, and not all results are received back to the clinics, besides it is time consuming for the nurses to write these results in patients' files.

All nurses suggested increasing the number of staff working in PHC clinics to implement the protocol properly and reopen the DM clinic because it gives better care and advice for DM patients.

III. The last focus group was conducted with eight experts representing Palestinian MOH, WHO and An-Najah University who were involved

in protocol implementation. This session took 96 minutes, the discussion focused on many points:

Q1: How to improve the training course for the protocol?

1- All participants agreed that the training provided good knowledge but needs to increase the practical part including more case scenario.

Dr Ramez Dweakat (Acting Director of NCD's Department, PHC &Public Health, MOH) said "the good knowledge in protocol regards NCDs should move to practice, mainly through increasing case scenario in the form of role play"

Dr Nadeem from WHO said "I think doctors have the required knowledge regarding the protocol, but they did not practice it correctly, I recommend to decrease the theoretical part in the training and increase the practical part"

2- Training on patients' files should be included in the training course, with clear responsibility for doctors and nurses, and it is recommended to involve registration staff in this part of training. Dr Yasser from Salfit clinic said " training on the new patient's files should be improved"

3- Training on insulin and DM complication should be included in the training sessions for both doctors and nurses. Director of nursing in Salfit district said "nurses should receive training on insulin not only the doctors".

4- The clear purpose of the protocol should be mentioned in the training course so HCWs be more interested; Dr Nadeem said "it is important to

show them how their work in the protocol can improve the health of society".

5- Involving other HCWs (pharmacist and laboratory technologist) in the training should be done cautiously, just to involve them in the general elements of the protocol and the specific details that are related to their jobs, Dr Samar from ANU said " involving them can cause a problem, it is better to know what their part in the protocol and giving them the training based on their role"

6- Participants agreed on including more case scenarios in the training with focus on the following problems:

- How to deal with insulin.
- The importance of cooperation between doctors and nurse.
- How to improve adherence to treatment by this protocol.
- Referral procedures.
- How to give health education in attractive way.

7- They also agreed on having special training sessions for doctors and nurses separately within the training course, with the focus on their role within the protocol.

Q2: What are the reasons behind the weakness of applying and practicing the protocol?

The weakness in applying and practicing the protocol is explained by the participants through several reasons:

1- Time delay in implementation of the protocol in PHC clinics after training course was seen as the main reason; providing pocket hands out of the protocol to all participants was viewed as a possible solution.
2- A varied level of interest in protocol was another reason. Dr Ramez said “most doctors did not take the action regarding patient situation such as high blood pressure, even though the recommended action is mentioned in the protocol”. Differences between nurses and doctors, and lack of cooperation between them are seen as reasons for weak practice.

Q3: What is your suggestion regards DM clinics?

Most participants agreed on the importance of keeping DM clinics in order to cover cases not included in the protocol, Dr Ramez said” in DM clinics the included patients should be [type 1DM, severe uncontrolled and severe complicated patients] .

Although the protocol’s main objective is to screen for risk factors, it is only applied on patients who have the disease because the cost of implementing the screening part exceeds the financial capacity of the ministry of health, Dr Zaher from ANU said” there is a distortion in protocol population, that what I am afraid from”

In summary FGDs provided good and valuable information regarding barriers of protocol implementation. Work pressure, patient compliance, and shortage of medication were the main barriers from physicians and

nurses point of view. Increasing practical part in training course was suggested by most of program holders to improve training.

Discussion

This is an evaluation for trained physicians and nurses working in primary care clinics in Salfit district on PEN protocol, which aims to integrate cardiovascular diseases prevention protocol into the national health sector strategic plans.

In this chapter, the researcher will discuss the main study results including knowledge of CVD and PEN protocol, attitude towards PEN protocol among physicians and nurses, performance of PHC physicians and nurses, completeness and documentation of protocol components in new patient files and the barriers for protocol implementation.

The study has demonstrated good level of knowledge for the majority of participants (64.3%), the general knowledge regarding CVD was more than 84.3% of the participants which points that the knowledge component of training was good in addition to the possibility of having previous knowledge and background about CVD. Participants achieved much less level on knowledge regarding PEN protocol principles and about risk prediction chart, (70% of participants with correct answers), this can be a result of long period that lapsed after receiving this new knowledge training before applying it in their work place (about six months).

This contradicts with the results of study in Egypt conductedto assess family physicians' knowledge, attitudes, practice, and performance

concerning holistic management of hypertensive patients, were more than half of family physicians (55.56%) had fair knowledge; about 41.27% of them had poor knowledge while only 3.17% had good knowledge [30].

Having good knowledge among primary health care physicians considered as very important to improve patients health, This is consistent with a study conducting in Poland to investigate the knowledge of patients on the prevention of arterial hypertension and identify the main sources of knowledge in order to make health promotion activities more effective, the patients reported that primary care physicians were the most common source of health information (67%, $n = 80$). Primary care physicians were also the most trusted source of information [36].

Our study shows no significant differences between males and females knowledge level, here are also no significant differences between nurses and physician, this can be due to the fact that both physicians and nurses attended the same training sessions and also possibly because of the small sample size we had. This is consistent with the findings of a study conducted in Egypt in 2006 to assess family physicians' knowledge, were no significant differences found in the knowledge of family physicians in relation to gender [30].

In this study we found that both physicians and nurses had similar attitude towards PEN protocol, the majority of participants (more than 90%) agreed on the main benefits of the PEN protocol and saw that the PHC clinics are

the suitable place for the application of the protocol. On the other hand most of them saw that the implementation of the protocol increases the work load and requires increasing the number of staff to handle the increase in work load.

The performance of physicians and nurses applying PEN protocol was observed, the study showed acceptable performance in some aspects and poor performance in others, this is attributable to the long period between receiving training on the protocol and starting the implementation of the protocol, also unclear responsibilities of physicians and nurses at the beginning of the implementation and changes in this responsibilities over the time of implementation.

In this study neither physician nor nurses asked about alcohol and therefore didn’t provide counseling on stopping alcohol; this can be attributed to religion issues, also most patients in the field site were old, who did not accept discussing alcohol issue. In comparison to a study conducted in Sweden that found alcohol screening and intervention were not performed in all patient groups as was originally intended, but were performed in limited groups of patients such as those with alcohol-related symptoms even in such society where alcohol is consumed without conservations [37].

Although participants had good attitude regarding the protocol but this is not enough for good practice. This is similar to a study conducted in Iran

that aimed to evaluate general physician knowledge, awareness, and practice for hypertension treatment which found that99% of physicians believed in the importance of hypertension as a community health problem, but 12% had requested for appropriate preclinical tests and 20% could handle hypertensive patients properly [38].

The Egyptian study showed that the majority of family physician had good attitude towards holistic management of hypertensive patients. However their level of performance was still unsatisfactory since about (55.3%) had unsatisfactory/poor performance level. Further training programs are recommended to develop the necessary skills [30].

The documentation of information in the new patient records is considered as an important step especially for the new program, this file serve as a good source for program information and can be used to measure program success. Our results showed that the completion rate for each file components is between 72.7%-99.4% in the reviewed patients files, this is considered a very good result if compared to another study conducted in Cyprus which found that GPs underreport clinical information (smoking behavior, lipid values and BP) [27].

The 10-years cardiovascular risk is one of the important components of PEN protocols, the study finding of 72.9% completion rate is not as high as other protocol components, this can be due to the observation that on implementation of the protocol in clinics, some patients were allowed to

visit PHC clinics without having a complete lab test (e.g.FBG, cholesterol) which is required to compute the 10-years cardiovascular risk, in addition to the lack of follow up for the majority of those patients.

Barriers for program implementation were assessed from two points of view, first physician and nurses who apply the protocol in PHC clinics, second MOH and WHO holder involved in protocol implementation. Physician and nurses share mostly the same view regarding barriers of implementation; they mentioned work load as the main obstacle, the protocol steps were difficult at the beginning for most of them but now it is easier and clearer. The distribution of work between them seems to be fair for physicians while nurses thought that the protocol adds much more load, especially in the first visit for the patient. This is because nurses enter most of the information of the initial visit, in addition to counselling about diet, exercise, and smoking cessation. In this study both physicians and nurses agreed that patient compliance was a major barrier, and poor patient adherence to medication was a real obstacle. This is similar to finding of survey conducted in 2005 in USA to evaluate physicians' adherence to cardiovascular disease (CVD) prevention guidelines according to physician specialty or patient characteristics, which found that a significant percent of physicians strongly agreed that patient compliance was the greatest barrier to prevent CVD. Lack of time for primary prevention was also a common barrier cited by primary care physicians [39].

Another study conducted in 2002 in Indiana to determine the state of diabetes care given by primary care physicians and whether a multifaceted intervention would improve adherence to diabetes guidelines. Based on targeted interviews with each physician at the end of the project, the primary barrier identified by physicians was that patients would not comply with recommendations (medical nutrition therapy for elevated lipids or with insulin therapy). The second barrier was lack of time to carry out multiple diabetes interventions in a brief visit, especially in patients with other medical issues to address [40].

The MOH and WHO holder involved in protocol implementation mentioned their explanation for some weak points in applying the protocol by physician and nurses. They mentioned long period of time between reviving the training course and starting the implementation of the protocol in PHC clinics. Other reason was the lack of interest among some HCWs in applying this protocol. They suggested improving the training course by including more practical sessions and less lecture type sessions. This is similar to the barriers found in study conducted in Argentina as lack of knowledge about preventing cardiovascular disease; communication problems within health teams and lack of motivation were considered the main barriers [28].

Another study in Netherlands which was conducted to identify barriers and enablers influencing the implementation of an intervention to stimulate culturally appropriate hypertension education among health care providers

in primary care, found that the main barriers are low motivated to participate in-quality improvement projects, lack of basic HTN knowledge by general physician assistants, and insufficient skills for patient education of general physician assistants [41].

When comparing our results to these studies it is obvious that many of the barriers to proper implementation are not specific to the protocol itself, but are similar to the obstacles that are usually encountered when a new protocol is introduced in primary care [41].

Limitations

1- This study is targeting a pilot protocol application where all physicians and nurses who received training in the pilot area of Salfit district were included, however the number of participants was relatively small which may be the cause of finding no statistically significant differences in aspects of applying the protocol between physicians and nurses.

2- In this study the researcher checked the documentation and completeness of file records which does not give information about protocol effects on patient's health; this can be an important objective however for future studies.

3- Physicians and nurses were observed separately because they have separate examination rooms; therefore it was difficult to observe what each patient received from both of them at the same time since only one observer visited the clinics.

4- Lack of control group to make comparison between trained and untrained physicians and nurses, this is because all PHC physicians and nurses in Salfit district received training.

Conclusion

In view of the results of this study, it can be concluded that:

1- The level of knowledge among the participants regarding the new protocol principles is good with a room for improvements, although the participants believe in the benefits of this protocol.
2- The performance of physicians and nurses for the new protocol is acceptable but many issues should be considered for further improvement (e.g. unclear responsibilities, time delay in implementation, and low interest).
3- This study shows good level of documentation for new file records which is good parameter for program implementation and is considered important source of information for other studies that would assess the effect of the protocol on patients' health.
4- Our study on pilot site for implementation shows that physicians and nurses can find the application of protocol easier if certain barriers are addressed during the planning and implementation period. Many of the barriers to implementation are not specific to the protocol itself, but are similar to the obstacles that are usually encountered when a new protocol is introduced in primary care.

Recommendations

1- Improving the training course by including more case scenarios and role play with focus on case management, insulin use, importance of cooperation between physicians and nurses, how to improve adherence to treatment by this protocol, referral procedures, and how to give health education in attractive way.

2- Providing booklet which summarizes the training information for physicians and nurses in PHC clinics, which serves as a reminder for them and also helps improve their knowledge.

3- Continuous monitoring and supervision for physicians and nurses especially in the initial period of implementation to ensure smooth flow of work, and provide bridge of communication between them and the protocol holder to manage any issues that may arise.

4- Specifically tailored training sessions should be planned for physicians and nurses separately focusing on their different specific responsibilities in protocol implementation. This will help them focus on and understand their responsibilities in the protocol implementation and its importance for the public health.

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Annex 1: Questionnaire.

بسم الله الرحمن الرحيم

حضرة الزميل/ة

نقوم بعمل دراسة تهدف الى تقييم مدى المعرفة ببروتوكول منظمة الصحة العالمية(PEN) protocol الخاص بالامراض غير المعدية، وقد تم إختياركم لتكونوا جزءاً من عينة الدراسة، لذا نأمل منكم الإجابة بموضوعية على أسئلة الإستبيان.

مؤكدين اقتصار استخدام المعلومات الواردة في هذه الإستبيان على أغراض البحث العلمي، ومراعاة السرية التامة و الحرية الكاملة بعدم الاجابة عن اية سؤال. ولا داعي لذكر الاسم في تعبئة هذا الطلب.

(شاكرين لك حسن التعاون)

جامعة النجام الوطنية

الباحثة: سنابل سهيل عفانه

تلفون: 0599340179

القسم الأول :المعلومات الشخصية:

الجنس: ☐ ذكر ☐ أنثى

المهنة: ☐ طبيب/ة ☐ ممرض/ة

العمر:.....

المؤهل العلمي:.....

عدد سنوات الخدمة في عيادات الصحة الاولية: .....

هل سبق و حضرت دورات تدريبية للإمراض غير السارية: ☐ نعم ☐ لا

اذا كانت الاجابة نعم كم عدد هذه الدورات:.....

القسم الثاني : المعلومات المتعلقة بالمعرفة بالإمراض غير المعدية و برتوكول منظمة الصحة العالمية (:) PEN Protocol

	الرجاء اختيار الاجابة الصحيحة
1	الامراض غير المعدية الرئيسية المسؤولة عن وفاة الملايين كل عام وتشكل العبء الاكبر في البلدان ذات الدخل المنخفض والمتوسط هي كل ما يلي ما عدا : أ. امراض القلب والشرايين ب. السرطان ج.السكري د. مرض الانسداد الرئوي المزمن (COPD) ه. ارتفاع دهون الدم (Dyslipidemia)
2	اي من الامراض التالية يعتبر من امراض القلب والشرايين الاكثر شيوعا و التي تؤثر على مالا يقل عن 600 مليون شخص حول العالم: أ. تحسس القصبات الهوائية ب. امراض الرئة ج. ضغط الدم المرتفع د. التهاب المفاصل الروماتزمية
	تعتبر هذه أمثلة على نصائح وقاية اولية (Primary Prevention) باستثناء:

3	أ.خفض كمية الملح في الطعام ب.التوقف عن التدخين ج.اخذ ادوية خافضة للضغط للسيطرة على ارتفاع الضغط د.خفض الوزن.
4	جميع عوامل الخطر (Risk Factors) المذكورة أدناه لا بد أن تؤخذ بعين الاعتبار عند استخدام مخطط منظمة الصحة العالمية / الجمعية الدولية لفرط ضغط الدم (WHO/ISH chart)للتنبؤ بمدى حصول أحداث قلبية وعائية مميتة أو غير مميتة على مدى 10 سنوات باستثناء: أ.السكري ب.الضغط ج. الجنس د. العمر هـ. الوزن و. التدخين ز. الكوليسترول في الدم
5	رجل مدخن عمره 50 سنة و قياس ضغط دمه الإنقباضي 160(ملم/زئبق) و قيمة الكوليسترول في دمه 270 ملغ/ ديسيليتر.ما هو نوع المخطط (Chart) الذي يجب استخدامه لتقدير مجمل إختطار حصول أحداث قلبية وعائية مميتة أو غير مميتة على مدى 10 سنوات: أ.المخطط (Chart) مع الكولسترول. ب.المخطط (Chart) بدون الكولسترول.
6	بالاعتماد على المعلومات في السؤال السابق ما تقدير نسبة الخطورة لحصول حدث قلبي وعائي مميت أو غير مميت على مدى 10 سنوات لديها: أ.اكثرمن 40% ب. 30%_40% ج. 20%_30% د. 10%_20% هـ.اقل من10 % و. لا خطر
7	دور الممرضة في الرعاية الصحية الاولية تشمل جميع مايلي عدا: أ. اجراء فحص شامل للتشخيص والتحقيق وادارة الحالات بشكل مناسب. ب. المساعدة في الفحص. ج. تعليم المريض والاسرة عن عوامل الخطر (Risk Factors) للامراض الغير معدية. د. المساعدة في المتابعه والرعاية. هـ. تقديم المشورة بشأن النظام الغذائي و نمط الحياة للمرضى.
8	جميع الحالات التالية ذكرها سوف يتم تحويلها (referral) ما عدا: أ. مريض ضغطه 145/95(ملم/زئبق) وعمره 35 عاما. ب. مريض يعاني من الزلال في البول (Proteinuria). ج. مريض سكري يعاني من التهاب بسيط في قدمه. د. مريض سكري يعاني من تدهور في الرؤية.
9	أي من التوصيات التالية يجب ان تتبع لتقليل خطر الاصابة بأمراض القلب: أ. التوقف عن التدخين.

	ب. اختيار الأطعمة الصحية. ج. ممارسة النشاط البدني . د. جميع ما ذكر.
10	أي من الحالات المرضية التالية تحتاج الى علاج دوائي لتخفيض ضغط الدم: أ.مريض قياس الضغط لدية مستمراكثر او يساوي 160/100 (ملم/زئبق) ب. مريض قياس الضغط لدية اقل او يساوي 160/100 (ملم/زئبق) ج. مريض قياس الضغط لدية 130/80 (ملم/زئبق) د. جميع ما ذكر.
11	نصيحتك لمريض السكري حول العناية بالقدم تشمل جميع ما يلي ما عدا: أ. تجنب المشي حافي القدمين او بدون جوارب. ب. غسل القدمين بالماء الفاتر وتجفيفهما خاصة بين اصابع القدم. ج. قطع مسمار اللحم او قطع النسيج اللين (calluses و corns). د. النظر الى قدميك كل يوم واذا كانت هناك مشكلة لا بد من مراجعة الطبيب.
12	امرأة تبلغ من العمر 55 عاما مدخنة غير مصابه بالسكري وتبلغ قراءة الضغط لديها 150 (ملم/زئبق) اما الكوليسترول في الدم فيبلغ212 ملغ/ ديسيليتر, ما تقديرنسبة الخطورة لحصول حدث قلبي وعائي مميت أوغيرمميت على مدى 10 سنوات لديها: أ.اقل من10% ب.20- 10 % ج.30- 20% د. 40- 30% هـ.اكثر من 40%
13	الغذاء الصحي للوقاية من امراض القلب يشمل جميع ما ذكر ما عدا: أ. تقليل استخدام الملح الى أقل من 5 غم في اليوم. ب. أكل السمك على الأقل 3 مرات في الشهر. ج. أكل 5 حصص من الفواكه والخضروات في اليوم الواحد. د. استبدال اللحوم الأخرى بالدجاج (بدون جلد).
14	كطبيب/ممرضة تعمل في الرعاية الصحية الأولية سوف تقوم بتطبيق البروتوكولات (Protocols) على الأشخاص المذكورين ما عدا : أ.شخص عمره اقل من 40 سنة . ب. شخص مدخن . ج. شخص يعاني من السمنة . د.شخص يعاني من السكري. هـ . شخص لديه تاريخ عائلي (*Family History*) لأمراض الكلى و السكري . و. شخص لديه تاريخ عائلي (*Family History*) لأمراض القلب.

15.ما هي اهم عوامل الخطر(Risk factor)لامراض القلب:

أ. .....

ب. .....

ج. .....

د.....

16. ما هي خطوات استخدام مخططات منظمة الصحة العالمية / الجمعية الدولية لفرط ضغط الدم (WHO/ISH chart)للتنبؤ بمجمل إختطار حصول أحداث قلبية وعائية مميتة أو غير مميتة على مدى 10 سنوات في حال لم يكن متوفراً قياس الكولسترول:

1. .....
2. .....
3. .....
4. .....
5. .....
6. .....

القسم الثالث : المعلومات المتعلقةبالاعتقاد حول بروتوكول منظمة الصحة العالمية PEN):

Protocol)

في مربع الاجابة الصحيحة Xالرجاء وضع اشارة						
		اوافق بشدة	**اوافق**	**متوسط**	**اعارض**	**اعارض بشدة**
1	أعتقد أن خطوات تطبيق البروتوكل (Protocol) كثيرة.					
2	أعتقد أن اختلاف الخبرات بين العاملين في عيادات الرعاية الصحية الأولية سوف يؤثر سلباً على تطبيق البروتوكول.					
3	أعتقد أن هناك حاجة لمزيد من الدورات التدريبية ليتم تطبيق هذا البروتوكول.					
4	أعتقد أن ضغط العمل سوف يؤثر سلبا على تطبيق البروتوكول.					
5	أعتقد أن هناك حاجة لزيادة عدد الموظفين العاملين في عيادات الصحة الأولية لتطبيق البروتوكول بشكل صحيح.					
6	أعتقد أن عيادات الرعاية الصحية الأولية هي المكان المناسب لتطبيق البروتوكول.					
7	أعتقد أن WHO PENهو تدخل فعال من حيث التكلفة للوقاية من الأمراض الغير المعدية.					
8	أعتقد أن تطبيق البروتوكول سوف يساعد في تحديد الأشخاص المعرضين لخطر الإصابة بالامراض غير المعدية.					
9	أعتقد أن هذا البروتوكول قام بتوزيع المهام بشكل عادل ومناسب بين العاملين.					
10	أعتقد أن هذا هو الوقت المناسب لتطبيق					

					مثل هذا النوع من البرتوكولات.	

Annex2: Checklist for performance.

Checklist

Did he/she ask about:	Yes	No	Done by
• Smoking			
• Alcohol			
• Occupation			
• Physical activity			
• Medication			
• Chest pain			
• Heart diseases			
• Kidney disease			

Did he/she asses :	Yes	No	Done by
• Waist circumference			
• Blood pressure			
• Fasting or random plasma glucose			
• Urine protein			
• Plasma cholesterol (if available)			
• Auscultation heart and lung			
• Palpitation of heart			
• Sensation of feet if DM			

	Yes	No	Done by
• Did he/she asses referral			
• Did he/she use WHO prediction chart			
• Did he/she apply protocol for patient according to their risk value			
• Did he/she counsel on medication			
• Did he/she counsel on diet			
• Did he/she counsel on physical activity			
• Did he/she counsel on tobacco cessation			
• Did he/she counsel on stop alcohol			

Annex 3: Checklist for essential equipments and medicines.

Essential Equipments and medicines

Equipments	***Found***	***Functioning***
Thermometer		
Stethoscope		
Blood pressure measurement device		
Measurement tape		
Weighing machine		
Peak flow meter		
Spacers for inhalers		
Glucometer		
Blood glucose test strips		
Urine protein test strips		
Urine ketenes' test strips		

Medicines	***Found***
Thiazide diuretic	
Calcium channel blocker (amlodipine)	
Beta-blocker (atenolol)	
Angiotensin inhibitor (enalapril)	
Statin (simvastatin)	
Insulin	
Metformin	
Glibenclamide	
Glyceryltrinitrate	
Isosorbidedinitrate	
Furosemide	
Spironolactone	
Salbutamol	
Prednisolone	
Beclometasone	
Aspirin	
Paracetamol	
Ibuprofen	
Codeine	
Morphine	
Penicillin	
Erythromycin	
Amoxicillin	
Hydrocortisone	
Epinephrine	
Heparin	
Diazepam	
Magnesium sulphate	
Promethazine	
Senna	
Dextrose infusion	
Glucose injectable solution	
Sodium chloride infusion	
Oxygen	

Annex 4: Checklist for file.

Checklist for file

Did the file records:	1	2	3	4	5	6
Previous medical history						
Family history						
Blood pressure (2 reading)						
Waist circumference						
Weight						
Tobacco smoking						
Counselling smoking cessation						
Counselling diet						
Counselling exercise						
Blood glucose						
Cholesterol						
10-Year Cardiovascular Risk						
Controlled - Hypertension						
Controlled – Diabetes						
Foot Examination						
Referred for Eye Exam						
Feedback Received from Referral (if second visit)						
Medication						

Annex 5: Focus group for participants.

Focus group for participant

1- What is your opinion regarding protocol steps?

2- What is your opinion regarding distribution of protocol steps between you and doctors/ nurses?

3- What are the barriers and difficulties for implementation?

Annex 6: Focus group for expert.

Focus group for expert

1- **How to improve the training course for the protocol?**

2- **What are reason behind weakness in applying and practicing the protocol?**

3- **What is your suggestion regards DM clinics?**

Annex 7: Invitation letter for focus group discussions.

دعوة للمشاركة بحلقه نقاش

حضرة الزميل/ة

كجزء من تقييم و تطوير تطبيق بروتوكول منظمه الصحة العالمية (PEN protocol) سوف يتم عقد حلقة نقاش مع الاطباء والممرضين الذين تلقوا التدريب الخاص بالبروتوكول لمناقشة عوائق تطبيق البروتوكول. انا ادعوك للمشاركة في حلقة النقاش حيث لك الحق في قبول أو رفض المشاركة فالمشاركة اختيارية و بإمكانك الانسحاب في أي وقت دون الحاجة لإبداء الأسباب وبدون أي تبعات, سيتم عقد حلقه النقاش بتاريخ...../2013/6 في مديرية صحة سلفيت ستكون مدة الاجتماع لـ 90 دقيقة و سيصل عدد المشاركين بين 8-12 مشارك, سوف يكون هناك تسجيل صوتي لحلقة النقاش.

كل المعلومات التي سوف يتم الحصول عليها من حلقة النقاش سوف تستخدم للبحث العلمي فقط ولن يتم ذكر اسماء المشاركين.

ارجو من حضرتك ارسال الرد على هذه الدعوة.

.....اوافق على المشاركة.

.....لا اوافق على المشاركة.

التوقيع

سنابل عفانه "طالبة ماجستير"

جامعة النجاح الوطنية

Annex 8: Consent form for focus group discussion.

جامعة النجاح الوطنية- كلية الدراسات العليا
نموذج موافقة مسبقة

انا الطالبة سنابل عفانه من كلية الدراسات العليا برنامج الصحة العامة في جامعة النجاح الوطنية, كجزء من رسالة الماجستير سوف اقوم بعقد حلقة نقاش لمناقشة عوائق تطبيق بروتوكول منظمة الصحة العامة في عيادات الصحة الاولية بمحافظة سلفيت.

انا ادعوك للمشاركة في حلقة النقاش حيث لك الحق في قبول أو رفض المشاركة في البحث, المشاركة اختيارية, وبإمكانك الانسحاب من البحث في أي وقت دون الحاجة لإبداء الأسباب وبدون أي تبعات, سيتم جمع المعلومات على شكل نصوص مكتوبة بالإضافة الى تسجيل صوتي لنقاش, سوف تكون مدة النقاش 90 دقيقة و يتم طرح عدد من الاسئلة حول العوائق المحتملة لتطبيق البروتوكول و يحق لك الاعتذار عن الاجابة عن اي سؤال.سوف يتم جمع المعلومات بدون ذكر اسماء المشاركين و سوف يتم التعامل معها بسرية تامة و لاغراض البحث العلمي فقط.

بتوقيع هذه الموافقة المسبقة تكون قد قمت بقراءة المعلومات الواردة سابقا، وأتيحت لك الفرصة أن تسأل أي سؤال وقد تمت الإجابة عليه بشكل كاف، وبناءا على ذلك توقع طوعيا للمشاركة في حلقة النقاش.

توقيع المشارك/ة: ..... التاريخ: ...../...../.....

.....اوافق على استخدام تسجيل صوتي للجلسة.....لا اوافق على استخدام تسجيل صوتي للجلسة.

اذا كان لديك أي سؤال متعلق بالبحث ترغب بالاستفسار عنه في وقت لاحق يمكن مراجعة الباحثة سنابل عفانة (0599340179).

نموذج الموافقة هذا تمت مراجعته والموافقة عليه من قبل (**IRB** جامعة النجاح الوطنية) ، وهي هيئة مهمتها المتابعة والتأكد من أن المشاركين في الأبحاث من قبل الجامعة محميون من أي أذى أو تبعات سلبية.

An - Najah
National University
Faculty of Medicine & Health Sciences
Department of Graduate Studies

بسم الله الرحمن الرحيم

جامعة النجاح
الوطنية
كلية الطب وعلوم الصحة
دائرة الدراسات العليا

IRB Approval letter

Study title:
Evaluation of Primary Health Care Physicians and Nurses performance for WHO PEN protocol for cardiovascular diseases that applied in Salfit district, Palestine.

Submitted by:
Sanabel Suhail Afana

Date Reviewed:
April 14, 2013

Date approved:
April 21,2013

Your study titled " Evaluation of Primary Health Care Physicians and Nurses performance for WHO PEN protocol for cardiovascular diseases that applied in Salfit district, Palestine." Was reviewed by An-Najah National University IRB committee & approved on April 21 , 2013.

Samar Musmar,MD, FAAFP

IRB Committee Chairman,
An-Najah National University

IRB

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جامعة النجاح الوطنيه

كلية الدراسات العليا

دراسة لتقييم أداء الأطباء والممرضين العاملين في عيادات الصحة الأولية لبرنامج منظمة الصحة العالمية الخاص بأمراض القلب والشرايين الذي تم تطبيقه في محافظة سلفيت ، فلسطين .

اعداد

سنابل سهيل عفانة

اشراف

د. سمر مسمار

د. زاهر نزال

قدمت هذه الاطروحة استكمالا لمتطلبات درجة الماجستير في الصحة العامة بكلية الدراسات العليا في جامعة النجاح الوطنية في نابلس – فلسطين.

2014

دراسة لتقييم أداء الأطباء والممرضين العاملين في عيادات الصحة الأولية لبرنامج منظمة الصحة العالمية الخاص بأمراض القلب والشرايين الذي تم تطبيقه في محافظة سلفيت ، فلسطين .

اعداد

سنابل سهيل عفانة

اشراف

د. سمر مسمار

د. زاهر نزال

الملخص

مقدمة: تخطط وزارة الصحة الفلسطينية لإعتماد و تطبيق برنامج منظمةالصحة العالمية الخاص بأمراض القلب والشرايين والذي يهدف الى مساعدة الدول الفقيرة في الحد من انتشار الأمراض غير السارية واستراتيجيات التعامل معها في عيادات الصحة الأولية و كان تطبيقه في محافظة سلفيت كخطوة أولية للتطبيق.

هدف الدراسة: تهدفالدراسة الى تقييم تطبيق برنامج منظمة الصحة العالمية الخاص بأمراض القلب والشرايين في محافظة سلفيت وذلك عن طريق تقييم المعرفة والاعتقاد والأداء للأطباء والممرضين الذين تدربواعلى البرنامج، وتقييم عملية التوثيق في سجلات المرضى، بالاضافة الى تحديد العوائق و الصعوبات من وجهة نظر كل من المشاركين والمشرفين على البرنامج.

طريقة البحث: التقييم تمعلى عدة مراحل حيث أجريت دراسة مسحية لمراكز الرعاية الصحية الأولية في محافظة سلفيت و ذلك باستخدام استبيان تم اعداده وتطويره لقياس المعرفة والاعتقاد لدى المشاركين ومراقبة المشاركين لتقييم أدائهم للبرنامج، ومراجعة اكتمال عملية التوثيق لسجلات المرضى بالاضافة الى عقد عدد من حلقات النقاش مع المشاركين و المشرفين على البرنامج لمناقشة عوائق التطبيق. وتشكلت عينة الدراسة من 14 عيادة و 49 مشارك و 350 سجل للمرضى .

نتائج الدراسة: توصلت الدراسة الى أن مستوى المعرفة لدى المشاركين بمبادئ البرنامج جيدة الى حد ما، معظم المشاركين يعتقدون بأهمية البرنامج ويوصون بزيادة عدد العاملين في عيادات الصحة الأولية لتطبيق البرنامج بشكل أفضل كما يعتبر اداء المشاركين للبرنامج مقبولا بشكل عام. كانت عملية التوثيق جيدة في سجلات المرضى، وكان العائق الأساسي للتطبيق هو ضغط العمل من وجهة نظر العاملين كذلك عدم وضوح المهام للأطباء والتمريض في البروتوكول، في حين اعتبرت قلة الاهتمام بالبرنامج بين المشاركين وطول المدة الزمنية بين التدريب والتطبيق للبرنامج من العوائق الأساسية من وجهة نظر مشرفي البرنامج.

الخلاصة: بالرغم من مساهمة التدريب على البرنامج في زيادة وعي المشاركين ومهاراتهم حول البرنامج ومبادئه، لازالت هناك حاجة الى زيادة التركيز على الجانب العملي في التدريب من أجل تطبيق البرنامج بشكل أفضل.