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Knowledge, Attitudes and Practices Regarding H1N1 (Swine Flu) Among Health Care Providers In Primary Health Centers

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1432/2011

بسم الله الرحمن الرحيم

" إِنَّمَا حَرَّمَ عَلَيْكُمُ الْمَيْتَةَ وَالدَّمَ وَلَحْمَ الْخِنْزِيرِ وَمَا أُهِلَّ بِهِ لِغَيْرِ اللَّهِ فَمَنِ اضْطُرَّ غَيْرَ بَاغٍ وَلَا عَادٍ فَلَا إِثْمَ عَلَيْهِ إِنَّ اللَّهَ غَفُورٌ رَحِيمٌ "

سورة البقرة [173]

Dedication

I dedicate this work to my father, my mother and my wife who gave me great support for holding the excitement and energy to completing this work , I thank them a lot and ask the Almighty Allah that to give me the strength to be helpful to them in their lives

Declaration

I certify that this thesis submitted for the degree of Master in public health, is the result of my own research, except where otherwise acknowledged, and that this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signed: ……

Yousef Fathi Fahajan
Date: / /2011.

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Researcher

Yousef Fathi Fahajan.

Abstract

This study titled "Knowledge, Attitudes and Practices Regarding H1N1 (Swine Flu) among Health Care Providers in Primary Health Centers" aimed to evaluate knowledge, attitudes and practices (KAP) towards Swine Flu among health care providers at Primary Health Centers in the Gaza Strip. Adequate knowledge and appropriate practices are essential in combating this serious infectious disease.

A quantitative, descriptive cross sectional design was used. The study sample included 300 eligible subjects who were selected through a stratified random selection. Self-administered, self-constructed questionnaire was used with a response rate of 93.3%. The questionnaire was validated by experts and reliability analysis was performed using Cronbach Alpha test (0.72). The SPSS program version 14.0 was used to analyze the data. Descriptive analysis followed by t-test and one way ANOVA were performed.

The health care providers' knowledge about H1N1 was high (92.2%), their attitudes scores were 65.8% and their practices scores were the lowest (60.9%). Also the results reveal that many of health care providers (50.5%) have indicated that television, radio and internet were their major sources of information about Swine Flu. Only 31.4% of the providers took the Swine Flu vaccination. Around 30% of the respondents reported that the vaccine for Swine Flu causes many problems, and 52.1% of the providers are familiar with the protocol and the MOH plans to address this disease. The correlation between level of attitudes and practices was strongly statistically significant (p value 0.001). No statistically significant correlations between knowledge and practices were found (P value 0.9). There were statistically significant differences between knowledge and profession type as nurses and physicians elicited higher scores than their counterparts from other groups (P value 0.001). Similarly, nurses and physicians had higher attitudes scores than other groups. Statistically significant differences between knowledge, practices and the location of PHC center were found in favor of Middle Zone governorate (P value 0.04).

It is recommended that a mass public health education campaign should be developed in order to promote awareness and subsequently good practices. Also the MOH should pay more efforts in dissemination the H1N1 protocols and in implementing them with appropriate supervision and follow-up.

List of Abbreviations

ANOVA	Analysis Of Variance
CDC	Center of Disease Control
CSHA	The Canadian Study of Health and Aging
CSHA	Canadian Study of Health and Aging
DGPC	Directorate General of Primary Care
FDA	U.S. Food and Drug Administration
GBS	Guillain -Barré Syndrome
GS	Gaza Strip
HCWs	Health Care Workers
HN	Haemaglutinin, Neuraminidase subtypes
ILI	Influenza Like Illness
KAP	Knowledge, Attitudes and Practices
MOH	Ministry of Health
NGO	Non-Governmental Organizations
NIH	National Institutes of Health
NIIP	National Influenza Immunization Program
OH	Occupational Health
PHC	Primary Health Care
RT-PCR	Reverse-Transcriptase Polymerase chain reaction
SARS	Severe Acute Respiratory Syndrome
SIV	Swine Influenza Virus
SPSS	Statistical Package for the Social Sciences
UNICEF	The United Nations International Children's Fund
UNRWA	United Nations Relief and Works Agency
US	United State
WHO	World Health Organization

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Chapter one: Introduction

1.1 Overview and background

As is the case with severe acute respiratory syndrome (SARS) and avian flu pandemic, swine flu has spread very rapidly worldwide. The World Health Organization has sounded the alarm and declared a state of high alert following an announcement in April 2009 as the emergence of a new pandemic virus known as H1N1, which is to overwhelm many regions of Mexico, caused the death of large numbers of casualties, especially among young people and children. The international threat posed by H1N1 calls for a necessary pooling of international data, both by medical teams and by social scientists. Particular concern has been expressed about the pandemic spreading to Asia, and the potential for mixing with other variants, such as avian influenza (Coker,2009).

In spite of the increase in the number of Influenza A (H1N1) cases as well as the response of the WHO by raising its pandemic alert status to phase 6 and extensive media coverage, public responses to Influenza A (H1N1) were muted. In practice, convincing the public that the threat is real is often a more pressing task for public health agencies. Many reports have examined the various levels of knowledge about infectious agents and public behavior in relation to these infections; such studies have primarily focused on the SARS and avian influenza outbreaks. Other studies have been recently published specifically on behavioral and attitudinal responses to pandemic (H1N1)2009Influenza (Blendon.etal, 2009).

It should be noted, that once a appear of new virus that brings to the scenes of the Spanish flu that emerged in 1918 and wiped out millions of people. But, is this fear justified despite our own modern health infrastructure. According to Patrick Matthys, head of epidemiology at the Swiss Federal Health Office "We cannot rule out similar scenarios, though the times have changed, and we will be in the face of grave danger in the event that spread a dangerous virus before we reach to the vaccine, and the deficit will impact the Swiss health system directly in the event that required the introduction of tens of thousands to hospitals at once " . The scene that happened in 1918 is not to happen again. Today's medical equipment, antibiotics and scientific knowledge and early warning systems are much better

than it used to be in the past, so we have to stop panic spreading of terror (Swiss Federal Office of Public Health,2009)

Swine influenza entered Gaza Strip in December 2009 and the Ministry of Health have developed programs and the declared a state of emergency in response to the epidemic and primary health care centers become the first line of communication with the public and their providers were the first medical teams who face the pandemic . On this basis should have been taught how the medical staff deals with swine flu according to knowledge, attitudes and commitment in the prevention of health care providers.

1.2Research Problem

The 2009 flu pandemic is a global outbreak of a new strain of H1N1 influenza virus, often referred to as "swine flu". Although the virus, first detected in April 2009, contains a combination of genes from swine, avian (bird), and human influenza viruses, it cannot be spread by eating pork or pork products. Similar to other influenza viruses, pandemic H1N1 is typically contracted by person to person transmission through respiratory droplets (CDC, 2009).

Currently, there are 14,286 confirmed deaths worldwide. This figure is a sum of confirmed deaths reported by national authorities and the WHO states that total mortality (including deaths unconfirmed or unreported) from the new H1N1 strain is "unquestionably higher" than this number.

Gaza Strip has been involved in this pandemic and many cases had appeared and few of them had died. Swine flu vaccine was given and scheduled for children and pregnant women, many people refuse to take the vaccine. Because Gaza Strip is very crowded, infection spread is anticipated to very fast. Also Gaza Strip still under siege making it lack the means of protection and treatment of this epidemic in the event of recurrence or spread.

1.3 Justification

The swine flu has become a pandemic, there are 14268 confirmed deaths in world, 125 of them in Arab region, and 22 of them in the Gaza Strip in March 2010. It is one of the most densely populated areas of the world where some 4100 people per square kilometer.

Primary care clinics are the first line of dealing with patients where about seventy five to eighty five percent of the population seeks primary health care yearly. It provides both the initial and the majority of health care services of a person or population.

There are no studies in this area to reveal the extent of knowledge, attitude and practice toward swine flu among health care providers in primary health clinics.

To reduce the risk of swine flu, It is a necessary to have an adequate preparedness and to transmit and promote accurate information to the public to increase their knowledge and attitude about this disease. The current level of information should be assessed among health care providers in primary health care centers who deal with and educate the community.

1.4 Aim of the study

The overall aim of this study is to evaluate the knowledge, attitudes and practices toward swine flu among health care providers in primary health clinics.

1.4.1 Objectives of the study

1. To determine the knowledge, attitude and practice toward swine flu among health care providers in primary health care clinics.
2. To identify the relationship between knowledge, attitude and practice toward swine flu according to socio demographic variables.
3. To determine the source of information about swine flu among health care providers and suggest recommendations that may help to increase the knowledge about swine flu.

1.5 Research questions

1. What is the level of knowledge, attitude and practice toward swine flu among health care providers in primary health clinics?
2. Is there any relationship between knowledge, attitude and practice toward swine flu according to socio demographic variables?
3. Is there any relationship between knowledge, attitude and practice toward swine flu and location of PHC centers?
4. Is there any relationship between knowledge, attitude and practice toward swine flu and level of PHC centers?
5. What is the source of information about swine flu among health care providers?

1.6 Context of the study

1.6.1 Demographic context

The entire area of historical Palestine is about 27,000 Km2, stretching from Ras Al-Nakoura in the north to Rafah in the south. Palestine is boarded by Lebanon in the north, the Gulf of Aqaba in the south, Syria and Jordan in the east and by Egypt and the Mediterranean Sea in the west. Palestine was place under British mandate, finished by Israel establishment in 1948 in implementing the Balfour Declaration in 1917 that given providing a homeland for Jews. The result was the uprooting of most Palestinians from their cities, towns, and Villages and the mass migration to West bank, Gaza Strip, Jordan, Lebanon, Syria, and other countries (Weinberger & Peter E, 2005).

The Gaza Strip lies on the Eastern coast of the Mediterranean Sea. It borders Egypt on the south and Mediterranean Sea on the west and Israel on the east and north. It is about 41kilometers long, and between 6 and 12 kilometers wide, with a total area of 378 square kilometers (148 sq mi). This small piece of land is a home to about 1.5 million Palestinians. Its position on the crossroads from Africa to Asia made it a target for occupiers and conquerors over the centuries. The last of these was Israel who occupied the Gaza Strip in 1967. Gaza Strip is a very crowded place with an area of 378 km^2 and constitutes about 6.1% of total area of the Palestinian territory land (West Bank and Gaza Strip). The population is mainly concentrated in the cities, small villages, and eight refugee camps that contain two thirds of the population of the Gaza Strip. In Gaza Strip, the population density is estimated at about 4,100 inhabitants / km2. It comprises five governorates: North Gaza, Gaza, Mid Zone, Khan Younis and Rafah (European Commission,2009).

1.6.2 Crowding in Gaza Strip

The population is about 1.5 million people, as of July 2009. Of the Palestinians living in the Gaza Strip, almost 1.0 million are UN-registered refugees. The majority of the Palestinians are descendants of refugees who were driven from or left their homes during the 1948 Arab-Israeli War. The Strip's population has continued to increase since that time. One of the main reasons for this rapid increase is the total fertility rate of more than 5 children per woman. In a ranking by total fertility rate, this places Gaza as 30th of 222 regions and above all non-African countries except Afghanistan and Yemen (CIA, 2010).

1.6.3 Health

There are four parties that provide health services in Gaza Strip including MOH, UNRWA, NGOs, and private sectors. The MOH serves as a regulatory body for Palestinian health system; the MOH manages public health services and delivery of primary, secondary, and tertiary care in governmental facilities. MOH operate 56 primary health centers (PHCs) constituting 45% of the total PHCs in Gaza Strip.

The health conditions in Gaza Strip face new challenges exacerbated by the intensified Israeli closure. The WHO has expressed its concerns about the consequences of the Palestinian internal political fragmentation; the socioeconomic decline; military actions; and the physical, psychological and economic isolation on the health of the population in Gaza Strip.

1.6.4 Preventive medicine

Preventive medicine refers to measures taken to prevent diseases or injuries rather than curing them or treating their symptoms. In Gaza Strip there is five governmental preventive medicine centers belonging to the Ministry of Health. Its monitor the health status and the registration of cases in the pandemics and infectious diseases and take appropriate action and educate citizens (DGPC, 2009).

1.7 Definitions

1.7.1 Attitude is a hypothetical construct that represents an individual's degree of like or dislike for an item. Attitudes are generally positive or negative views of a person, place, thing, or event which is often referred to as the attitude object. Most attitudes are the result of either direct experience or observational learning from the environment (Anderson,1983). I prefer that attitude positive or negative and formed from observation and experience.

1.7.2 Health care provider or health professional is a person who delivers proper health care in a systematic way professionally to any individual in need of health care services. Health care professionals include physicians, nurses, pharmacists and paramedics.

1.7.3 Knowledge is defined by the Oxford English Dictionary as (i) expertise, and skills acquired by a person through experience or education; the theoretical or practical understanding of a subject (Oxford Dictionary).

1.7.4 Practice is the act of rehearsing a behavior over and over, or engaging in an activity again and again, for the purpose of improving or mastering it, as in the phrase "practice makes perfect"(Ericsson, et al, 1993).

1.7.5 Primary Health Center (PHC) is the basic structural and functional unit of the public health services in developing countries. PHCs were established to provide accessible, affordable health services to the nations of WHO. (Alma Ata international conference, 1978).

1.8 Setting of Study

The study will be conducted at governmental PHCs in Gaza Strip, at primary health care at three different levels (II, III and IV) in the five governorates of Gaza Strip (North Gaza, Gaza, Mid-zone, Khan Younis, and Rafah).

Chapter Two

Conceptual Framework and Literature Review

2.1 Conceptual Framework

From the evidence of literature reviewed, practice and attitude may be influnced by knowledge. Moreover, all these may be influenced by age, profession type, years of education, years of experience and source of information . Reviewing the different previous literature, the researcher has designed the theoretical framework in the following figure.

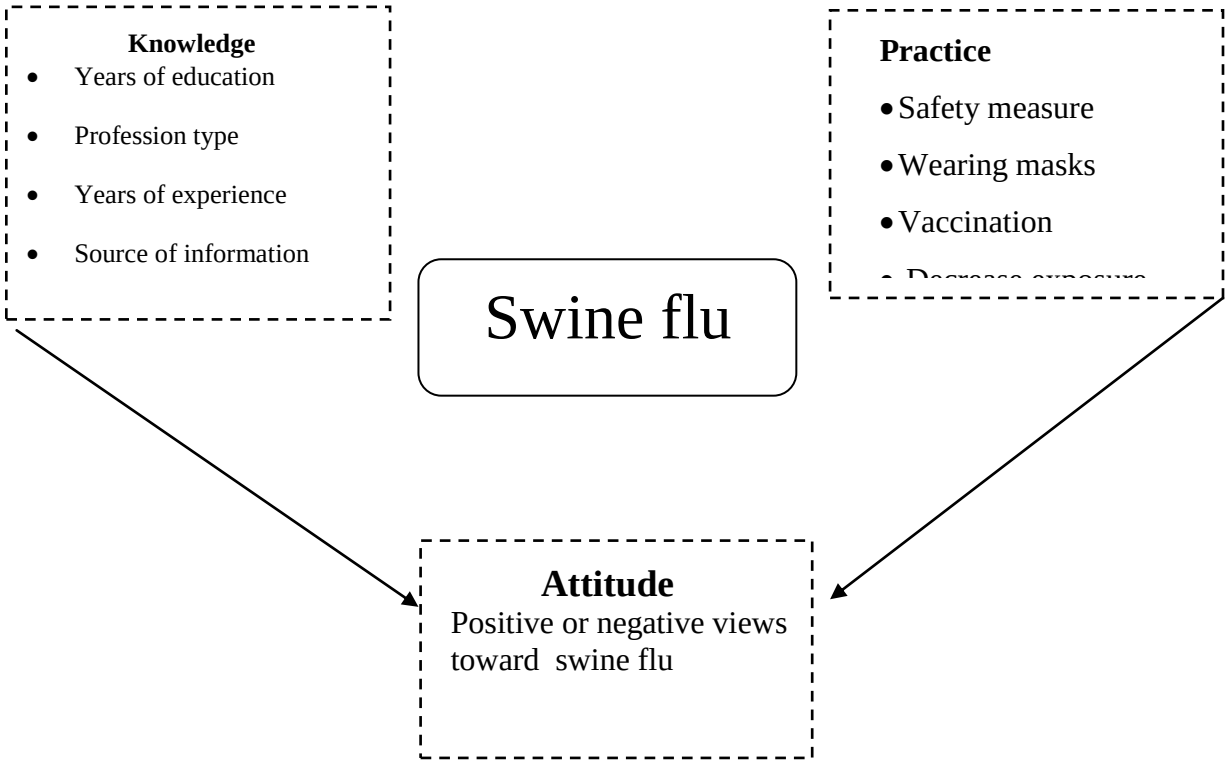

Figure 3.1 The Relationship between Knowledge, Attitude and Practice of Health Care Providers with Different Socio-demographic Factors.

2.1.1 Dependent variables:

- **Knowledge**

Knowledge is the information that changes something or somebody either by becoming grounds for actions, or by making an individual (or an institution) capable of different or more effective action (Achterbergh and Vriens, 2002).

- **Attitude** is a hypothetical construct that represents an individual's degree of like or dislike for an item. Attitudes are generally positive or negative views of a person, place, thing, or event which is often referred to as the attitude object. Most attitudes are the result of either direct experience or observational learning from the environment (Aranson etal, 1994).

- **Practice** is the act of rehearsing a behavior over and over, or engaging in an activity again and again, for the purpose of improving or mastering it, as in the phrase "practice makes perfect"(Ericsson, 1993).

2.1.2 Independent variables

- **Socio demographic**

Statistical socio-economic characteristics or variables of a population, such as age, sex, education level, income level, marital status, occupation, religion, birth rate, death rate, average size of a family, average age at marriage. A census is a collection of the demographic factors associated with every member of a population

2.1.3 Swine flu

New strain of H1N1 influenza virus, often referred to as "swine flu". Although the virus, first detected in April 2009, contains a combination of genes from swine, avian (bird), and human influenza viruses, it cannot spread by eating pork or pork products (CDC, 2010).

2.1.4 Primary Health Care

Primary health care, often abbreviated as PHC, is "essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and the country can afford to maintain at every stage of their development in the spirit of self-determination" (Alma Ata, 1978).

It was a new approach to health care that came into existence following the international conference in Alma Ata in 1978 organized by the World Health Organization and the UNICEF. Primary health care was accepted by the member countries of the WHO as the key to achieving the goal of Health for all.

As people all over the world become more and more frustrated at the inability of today's health systems and services to meet their needs, demand for a renewal of primary health care and health for all is increasing.

Selective primary health care is a form of primary health care in which diseases are more specifically targeted in developing countries to initiate the process of primary health care. In developing primary health care, which is the ultimate goal, selective primary health care can be a very useful tool in helping to alleviate some of the more pressing issues.

2.1.4.1 Primary health care services in Palestine

Primary health care system (PHC) is a major component of Palestinian health care system; this system has provided health care to all Palestinian people especially for children and other vulnerable groups. Primary health care centers in Palestine provide primary and secondary health care services as well as tertiary services.

The MOH is working with other health sectors in providing the primary health services mainly with UNRWA, and NGOs sector. At the end of 2005, there were 654 PHC centers in Palestine; these centers are cared for about 3.7 million people (129 centers in Gaza and 525 centers in West Bank). Classification of PHC according to providers shows that, the MOH is considered the main provider with 63.6% of the total PHC centers, followed by the NGOs with 28.3%, then UNRWA with 8.1%. It is worth to mention that, the private sector plays an important role in providing PHC services to Palestinian people but, there is limited information about these centers. The average ratio of persons per center was 5,752 (10,774 in Gaza Strip and 4,519 in West Bank). The Number of PHC centers per 10,000 persons was 1.7 in 2005 while it was 1.9 in 2000 (MOH, 2005)

2.1.4.2 Classification of PHC

The total number of PHC centers in the Gaza Strip is 56 in comparison with 43 centers in 2000, with an increase of 30.2%. The highest ratio of population per center was recorded in Rafah with 41,310 persons per centre and the lowest ratio in Mid-Zone with 12,570. The number of governmental PHC centers per 10,000 persons was 0.40. PHC system in Gaza Strip is well established and functioning despite the high population density and the overcrowding of population.

Classification of PHC according to center level illustrated that, 30 centers are classified as level II, 19 centers as level III and 7 as level IV. In general, there are 6 centers working 3 shifts (24 hours), 12 centers working 2 shifts and 38 centers working only one shift, one of which has a delivery unit in Gaza City. The PHC centers provide special health care services in different aspects; 42 centers provide immunization and antenatal care and family planning services, in addition to 107 specialized clinics and 30 dental and oral clinics. About 35 centers have laboratories and 13 centers have x- Ray units.

The annual report of the Directorate General of primary health care for the year 2009 shows that the health services received 2,642,907 cases. The highest was in the Gaza governorate with 38% followed by Khan Younis governorate 20% , the North Gaza 18%, Middle Zone 15%, and Rafah with 10%. The report said that the number of visitors to specialized clinics amounted to 180,012 visitors; the highest in the Sourani center by 44,017 and the Alsalam center was least with 350 clients throughout the year. The annual report showed that the laboratory was the most pressure at work, with 185,684 cases, followed by laboratory examination of sections of the teeth that received 88.335 clients, while the department of urology had at least pressure, which received 138cases.The report indicated that the total visitors to the chronic diseases amounted to 230.844 visitors. The report also pointed to the existence of a steady increase in the number of patients to health care centers compared to previous years in light of growing population. (DGPC, 2009).

2.2 Literature Review

This part is divided into different sections; it begins with the definition of knowledge, attitude, practice and their theories; then definition of swine flu and discussion of its sources, effects, spread. protection measure, vaccination programs and how to deal with the disease.

2.2.1 Knowledge:

Know-how consists of practical expertise and skills, know that knowledge encompasses theoretical knowledge. That is found in text books and includes formal statements about interactional and causal relationships between events (Benner, 1984).

Knowledge is the product of knowing; it is both experiential and summative (Walker and Avant, 1988).There are a different views among psychologist about the meaning of knowledge and how knowledge, so it is important for us to describe these different views and their cognitive development theories which describe how our knowledge is developing.

Piaget's theory of cognitive development (1980): Piaget has often been referred to as the pioneer of research into cognitive development in children. His overall approach to understanding cognitive development was known as genetic epistemology.

Piaget was interested in the way that knowledge and understanding cognition had evolved in the human beings; also he was interested in showing how the young child could move from primitive state of infant cognition up to the state of having an advanced ability to handle abstract, formal logic. His theory centers on the idea that cognitive development takes place through the formation and development of schemata in two important and fundamental processes:

1. Assimilation, in which new information is absorbed into the schema without particularly changing it, so that the schema's range simply extends itself a bit.

2. Accommodation, in which the schema itself has been developed and extended because it isn't adequate to cope with the new information if it doesn't.

2.2.1.1 The three mode of knowledge:

1- Enactive mode (based on actions):

The children represent the world through action: Any knowledge they have based upon that they have experienced through their own behavior.

2-The iconic modes:

Involve the use of visual imagery to represent objects in memory-information is stored by "mental pictures".

3- Symbolic (based on symbols especially language): According to Carper in 1978 who was one of the first nurses to consider the nature of knowing in nursing. She considers that there are four types of knowledge related to nursing:

a) **Empirics**: Concern the science of nursing and its purpose is to describe, explain and predict phenomena.

b) **Aesthetics**: Involves knowledge which relates to the art of nursing.

c) **Personal knowledge:** relates to the way that nurses view themselves and the client, and is concerned with the therapeutic use of self.

d) **Ethical knowledge:** encompasses, the understanding of different philosophical positions about what is good, right and wrong. During the discussion of different theories and opinions about knowledge it was found that each of the psychologists; Piaget, Fischer's, Tolman and others see the human being of all ages as integral person who can plan and think a problem, each one has a different view of knowledge, which is acquired through experience or by reading, watching television, playing different computer games (iconic representation or iconic mode). But it is not enough for a person to have knowledge only but also to have attitude toward it. The knowledge is the first step for the individual to develop an attitude that motivates him/her to practice a relevant behavior.

2.2.2 Scientific knowledge

The development of the scientific method has made a significant contribution to our understanding of knowledge. To be termed scientific, a method of inquiry must be based on gathering observable, empirical and measurable evidence subject to specific principles of reasoning (Newton 1999). The scientific method consists of the collection of data through observation and experimentation, and the formulation and testing of hypotheses. Both science and the nature of scientific knowledge have also become the subject of Philosophy.

As science itself has developed, knowledge has developed a broader usage which has been developing within biology/psychology, discussed elsewhere as meta-epistemology, or genetic epistemology, and to some extent related to "theory of cognitive development". Note that "epistemology" is the study of knowledge and how it is acquired. Science is “the process used every day to logically complete thoughts through inference of facts determined by calculated experiments." Sir Francis Bacon, critical in the historical development of the scientific method, his works established and popularized an inductive methodology for scientific inquiry. His famous aphorism, "knowledge is power" (Francis Bacon, 1597).

Until recent times, at least in the Western tradition, it was simply taken for granted that knowledge was something possessed only by humans and probably adult humans at that. Such considerations seem to call for a separate definition of "knowledge" to cover the biological systems. For biologists, knowledge must be usefully available to the system, though that system need not be conscious. Thus the criteria seem to be:

- The system should apparently be dynamic and self-organizing (unlike a mere book on its own).
- The knowledge must constitute some sort of representation of "the outside world"، or ways of dealing with it (directly or indirectly).
- There must be some way for the system to access this information quickly enough for it to be useful.

Scientific knowledge may not involve a claim to certainty, maintaining skepticism means that scientists will never be absolutely certain when they are correct and when they are not.

2.2.3 Attitude:

Attitudes are one way of describing differences between people; that is, with regard to their differing likes and dislikes. Attitudes are not transient feelings or moods but consistent and enduring thoughts, beliefs and feelings that people have about particular attitude objects that is about issues, people or events (Aranson, et al, 1994).

Definition of attitude:

A learned orientation or disposition which provides a tendency to respond favorably or unfavorably to the object or situation (Rokearch, 1968). Other researchers have defined

attitude in different ways: In 1937, Allport defined attitudes as: “a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual’s response to all objects and situations with which it is related”.

2.2.3.1 Attitudes three components

1. **An emotional or evaluative**

It describes emotions and feelings which arise towards the objects of ones attitude, if we talk for example about breast feeding, what dose mother feel about practice of breast feeding or how practice of breast feeding makes mother feels? “Example of emotional component”:

2. **Cognitive:**

This is described as a belief or an idea that the person has about an object, for example: what is the mother belief or idea about breast feeding?

3. **Action or behavioral component:**

This is described as ones’ action toward the objects of ones’ attitude, for example: how the mothers perform or practice breast feeding? What is the mother‘s action?

The cognitive, evaluative and behavioral components of attitude system can be assessed and may provide results which differ from each other. (Cormark, 2000).

2.2.3.2 Functional aspects of attitude:

Daniel Katz (1960) argued that attitudes serve four different functions:

1. A knowledge function: Attitudes can give meaning to our experiences.
2. Adjustive or utilization function: Certain attitudes may make us more socially acceptable and so help our social interaction.
3. A value expressive function: Allows us to express what we experience as the more positive aspects of our own inner selves.
4. Ego-defensive function: Allows us to define and protect our unconscious motives and ideas.

2.2.3.3 Attitude formation

1. Direct experience: means direct contact with the object of one’s attitude.

2. Parental information: here perhaps lies the most influential factor in attitude formation.

3. Group and media influence: The impact of group influence in attitude is as important as parental influence. Group influence would include schools and peers. Social psychologists for several decades have investigated the links between beliefs and evaluations on the one hand and evaluations and behaviors on the other. Beliefs or cognitions that we hold show a general corresponding to whether something is positively or negatively evaluated. So if someone holds positive attitudes toward an object, he will have predominantly favorable thoughts about them, but if he holds negative attitudes towards an object, he will have predominantly unfavorable thoughts. The relationship between evaluations and behaviors is less clear for many years, social scientists regarded attitudes as the causal element in relation to behavior. People who have positive attitudes toward a particular object or event are assumed to be engaged in positive behavior toward it. Heider (1944) believed that understanding people's cognitions or ideas about relationships would provide the key to understanding social behavior; and that there is a strong tendency for people to prefer their attitudes to be consistent with one another according to Heider's theory. If our attitudes are inconsistent, Heider's argued, a state of cognitive imbalance will occur producing tension and a certain level of stress. Also unbalanced attitudes will leave us with unpleasant feelings of tension, and so we will strive to balance them in some way. So, in general, we seek a cognitive balance between our different attitudes. Most modern theories agree that attitude is represented in memory and that the accessibility of an attitude is a factor that can exert a strong influence on behavior (Gross and Paget H, 2000).

2.2.3.4 Attitude change

Attitudes can be changed through persuasion and we should understand attitude change as a response to communication. Experimental researches into the factors that can affect the persuasiveness of a message include:

1. **Target Characteristics:** These are characteristics that refer to the person who receives and processes a message. One such trait is intelligence - it seems that more intelligent people are less easily persuaded by one-sided messages. Another variable that has been studied in this category is self-esteem. Although it is sometimes thought that those higher in self-esteem are less easily persuaded, there is some evidence that the relationship between

self-esteem and persuasibility is actually curvilinear, with people of moderate self-esteem being more easily persuaded than both those of high and low self-esteem levels. The mind frame and mood of the target also plays a role in this process (Breckler and Wiggins, 1992).

2**. Source Characteristics**: The major source characteristics are expertise, trustworthiness and interpersonal attraction or attractiveness. The credibility of a perceived message has been found to be a key variable here; if one reads a report about health and believes it came from a professional medical journal, one may be more easily persuaded than if one believes it is from a popular newspaper. Some psychologists have debated whether this is a long-lasting effect and Hovland and Weiss (1951) found the effect of telling people that a message came from a credible source disappeared after several weeks (the so-called "sleeper effect"). Whether there is a sleeper effect is controversial. Perceived wisdom is that if people are informed of the source of a message before hearing it, there is less likelihood of a sleeper effect than if they are told a message and then told its source.

3. Message Characteristics: The nature of the message plays a role in persuasion. Sometimes presenting both sides of a story is useful to help change attitudes.

Cognitive Routes: A message can appeal to an individual's cognitive evaluation to help change an attitude. In the central route to persuasion the individual is presented with the data and motivated to evaluate the data and arrive at an attitude changing conclusion. In the peripheral route to attitude change, the individual is encouraged to not look at the content but at the source. This is commonly seen in modern advertisements that feature celebrities. In some cases, physician, doctors or experts are used. In other cases film stars are used for their attractiveness (Eagly, and Chaiken, 1995).

2.2.4 Practice

The act of rehearsing a behavior over and over, or engaging in an activity again and again, for the purpose of improving or mastering it, as in the phrase "practice makes perfect. Practice is merely the reinforcement of actions that serve to generate an outcome or outcomes; it is believed that by improving the type of practice you do, you can in turn generate results at a faster rate.

Roberto Moretti has identified five key processes that make for efficient practice, namely:

- Identification - building an awareness of what you are practicing to ensure you know how to do it perfectly.

- Isolation - the selection and focusing on something that is the proper size for one's focus to process and execute with a high degree of perfection.
- Reinforcement - the action of consistently and continuously repeating the above-selected action so it becomes autonomous.
- Integration - the practicing of interrelated actions either one after each other or together to construct and train in more complex actions or sequences of actions.
- Escalation - consistently selecting new practice material congruent with one's goals in skill acquisition as previous material is mastered.

2.2.5 Swine flu

The 2009 flu pandemic is a global outbreak of a new strain of H1N1 influenza virus, often referred to as "swine flu". Although the virus, first detected in April 2009, contains a combination of genes from swine, avian (bird), and human influenza viruses, it cannot spread by eating pork or pork products (CDC, 2010).

The outbreak has begun in the state of Mexico, with evidence that there had been an ongoing epidemic for months before it was officially recognized as such. The Mexican government closed most of Mexico City's public and private facilities in an attempt to contain the spread of the virus. However the virus continued to spread globally; clinics in some areas were overwhelmed by people infected; and the World Health Organization (WHO) and US Centers for Disease Control (CDC) stopped counting cases and in June declared the outbreak to be a pandemic (Chan and Margaret, 2009).

While only mild symptoms are experienced by the majority of people, some have more severe symptoms. Mild symptoms may include fever, sore throat, cough, headache, muscle or joint pains, nausea, vomiting, or diarrhea. Those at risk of a more severe infection include: asthmatics, diabetics, those with obesity, heart disease, the immune-compromised, children with neurodevelopment conditions, and pregnant women (CDC's Diabetes Program, 2009).

In addition, even for persons previously very healthy, a small percentage of patients will develop viral pneumonia or acute respiratory distress syndrome. This manifests itself as

increased breathing difficulty and typically occurs 3 to 6 days after initial onset of flu symptoms. Similar to other influenza viruses, pandemic H1N1 is typically transmitted by person to person transmission through respiratory droplets (WHO, 2009).

2.2.5.1 Classification

Three generations of influenza viruses cause human flu. Two also cause influenza in pigs, with influenza A being common in pigs and influenza C being rare. Influenza B has not been reported in pigs. Within influenza A and influenza C, the strains found in pigs and humans are largely distinct. Because of reassortment, there have been transfers of genes among strains crossing swine, avian, and human species boundaries (Heinen, 2003).

Influenza C

Influenza C viruses infect both humans and pigs, but do not infect birds. Transmission between pigs and humans has occurred in the past. For example, influenza C caused small outbreaks of a mild form of influenza amongst children in Japan and California. Because of its limited host range and the lack of genetic diversity in influenza C, this form of influenza does not cause pandemics in humans (Bouvier & Palese, 2008).

Influenza A

Swine influenza is known to be caused by influenza A subtypes H1N1, H1N2, H2N3, H3N1, and H3N2. In pigs, three influenza A virus subtypes (H1N1, H1N2, and H3N2) are the most common strains worldwide. In the United States, the H1N1 subtype was exclusively prevalent among swine populations before 1998; however, since late August 1998, H3N2 subtypes have been isolated from pigs. As of 2004, H3N2 virus isolates in US swine and turkey stocks were triple reassortments, containing genes from human (HA, NA, and PB1), swine (NS, NP, and M), and avian (PB2 and PA) lineages (Kothalawala etal, 2006).

2.2.5.2 Swine influenza history

Swine influenza was first proposed to be a disease related to human influenza during the 1918 flu pandemic, when pigs became sick at the same time as humans. The first

identification of an influenza virus as a cause of disease in pigs occurred about ten years later, in 1930. For the following 60 years, swine influenza strains were almost exclusively H1N1. Then, between 1997 and 2002, new strains of three different subtypes and five different genotypes emerged as causes of influenza among pigs in North America. In 1997–1998, H3N2 strains emerged. These strains, which include genes derived by reassortment from human, swine and avian viruses, have become a major cause of swine influenza in North America. Reassortment between H1N1 and H3N2 produced H1N2. In 1999 in Canada, a strain of H4N6 crossed the species barrier from birds to pigs, but was contained on a single farm (Olsen, 2002).

The H1N1 form of swine flu is one of the descendants of the strain that caused the 1918 flu pandemic. As well as persisting in pigs, the descendants of the 1918 virus have also circulated in humans through the 20th century, contributing to the normal seasonal epidemics of influenza . However, direct transmission from pigs to humans is rare, with only 12 recorded cases in the U.S. since 2005. Nevertheless, the retention of influenza strains in pigs after these strains have disappeared from the human population might make pigs a reservoir where influenza viruses could persist, later emerging to reinfect humans once human immunity to these strains has waned (Taubenberger and Morens, 2006).

Swine flu has been reported numerous times as a zoonosis in humans, usually with limited distribution, rarely with a widespread distribution. Outbreaks in swine are common and cause significant economic losses in industry, primarily by causing stunting and extended time to market. For example, this disease costs the British meat industry about £65 million every year (Kay, etal 1994).

2.2.5.3 The 1918 pandemic in humans

The 1918 flu pandemic in humans was associated with H1N1 and influenza appearing in pigs; this may reflect a zoonosis either from swine to humans or from humans to swine. Although it is not certain in which direction the virus was transferred, some evidence suggests that, in this case, pigs caught the disease from humans. For instance, swine influenza was only noted as a new disease of pigs in 1918, after the first large outbreaks of influenza amongst people. Although a recent phylogenetic analysis of more recent strains of

influenza in humans, birds, and swine suggests that the 1918 outbreak in humans followed a reassortment event within a mammal, the exact origin of the 1918 strain remains elusive. It is estimated that anywhere from 50 to 100 million people were killed worldwide (Vana and Westover, 2008).

2.2.5.4 The 1976 U.S. outbreak

On February 5, 1976, in the United States an army recruit at Fort Dix said he felt tired and weak. He died the next day and four of his fellow soldiers were later hospitalized. Two weeks after his death, health officials announced that the cause of death was a new strain of swine flu. The strain, a variant of H1N1, is known as A/New Jersey/1976 (H1N1). It was detected only from January 19 to February 9 and did not spread beyond Fort Dix (Gaydos et al, 2006).

This new strain appeared to be closely related to the strain involved in the 1918 flu pandemic. Moreover, the ensuing increased surveillance uncovered another strain in circulation in the U.S: A/Victoria/75 (H3N2) spread simultaneously, also caused illness, and persisted until March. Alarmed public-health officials decided action must be taken to head off another major pandemic, and urged President Gerald Ford that every person in the U.S. be vaccinated for the disease (Schmeck and Harold, 1976).

The vaccination program was plagued by delays and public relations problems. On October 1976, immunizations began and three senior citizens died soon after receiving their injections. This resulted in a media outcry that linked these deaths to the immunizations, despite the lack of any proof that the vaccine was the cause. According to science writer Patrick Di Justo, however, by the time the truth was known that the deaths were not proven to be related to the vaccine, it was too late. "The government had long feared mass panic about swine flu, now they feared mass panic about the swine flu vaccinations." This became a strong setback to the program (Richard et al, 1978).

There were reports of Guillain-Barré syndrome, a paralyzing neuromuscular disorder, affecting some people who had received swine flu immunizations. Although if a link exists is still not clear, this syndrome may be a rare side-effect of influenza vaccines. As a result,

Di Justo writes that "the public refused to trust a government-operated health program that killed old people and crippled young people." In total, 48,161,019 Americans, or just over 22% of the population, had been immunized by the time the National Influenza Immunization Program (NIIP) was effectively halted on December 16, 1976 (Retailliau et al, 1980).

Overall, there were 1098 cases of Guillain-Barré Syndrome (GBS) recorded nationwide by CDC surveillance, 532 of which occurred after vaccination and 543 before vaccination. There are about one to two cases of GBS per 100,000 people every year, whether or not people have been vaccinated. The vaccination program seems to have increased this normal risk of developing GBS by about one extra case per 100,000 vaccinations. The CDC states that most studies on modern influenza vaccines have seen no link with GBS, although one review gives an incidence of about one case per million vaccinations (Schonberger et al, 1979).

2.2.5.5 The 1988 zoonosis

In September 1988, a swine flu virus killed one woman and infected others 32 years old Barbara Ann Wieners was eight months pregnant when she and her husband, Ed, became ill after visiting the hog barn at a county fair in Walworth County, Wisconsin. Barbara died eight days later, after developing pneumonia. The only pathogen identified was an H1N1 strain of swine influenza virus. Doctors were able to induce labor and deliver a healthy daughter before she died. Her husband recovered from his symptoms.

Influenza -like illness (ILI) was reportedly widespread among the pigs exhibited at the fair. Of the 25 swine exhibitors aged 9 to 19 at the fair, 19 tested positive for antibodies to SIV, but no serious illnesses were seen. The virus was able to spread between people, since 1-3 health care personnel who had cared for the pregnant woman developed mild influenza -like illnesses, and antibody tests suggested that they had been infected with swine flu. However, there was no community outbreak (Kimura, etal,1998).

2.2.5.6 The 1998 US outbreak in swine

In 1998, swine flu was found in pigs in four U.S states. Within a year, it had spread through pig populations across the United States. Scientists found that this virus had originated in pigs as a recombinant form of flu strains from birds and humans. This outbreak confirmed that pigs can serve as a crucible where novel influenza viruses emerge as a result of the reassortment of genes from different strains. Genetic components of these 1998 triple-hybrid stains would later form six out of the eight viral gene segments in the 2009 flu outbreak (Stephanie, 2009).

2.2.5.7 The 2009 outbreak in humans

In late April of 2009, Margaret Chan, the World Health Organization's director-general, declared a "public health emergency of international concern" under the rules of the WHO's new International Health Regulations when the first two cases of the H1N1 virus were reported in the United States, followed by hundreds of cases in Mexico (CDC, 2009).
The new strain was initially described as an apparent reassortments of at least four strains of influenza A virus subtype H1N1, including one strain endemic in humans, one endemic in birds, and two endemic in swine (Trifonov et al, 2009).

2.2.6 Transmission

2.2.6.1 Transmission among pigs

Influenza is quite common in pigs, with about half of breeding pigs having been exposed to the virus in the US. Antibodies to the virus are also common in pigs in other countries. The main route of transmission is through direct contact between infected and uninfected animals. These close contacts are particularly common during animal transport. Intensive farming may also increase the risk of transmission, as the pigs are raised in very close proximity to each other. The direct transfer of the virus probably occurs either by pigs touching noses, or through dried mucus. Airborne transmission through the aerosols produced by pigs coughing or sneezing is also an important means of infection. The virus usually spreads quickly through a herd, infecting all the pigs within just a few days.

Transmission may also occur through wild animals, such as wild boar, which can spread the disease between farms (Saenz et al, 2006).

2.2.6.2 Transmission to humans

People who work with poultry and swine, especially people with intense exposures, are at increased risk of zoonotic infection with influenza virus endemic in these animals, and constitute a population of human hosts in which zoonosis and reassortments can occur. Vaccination of these workers against influenza and surveillance for new influenza strains among this population may therefore be an important public health measure. Transmission of influenza from swine to humans who work with swine was documented in a small surveillance study performed in 2004 at the University of Iowa. This study among others forms the basis of a recommendation that people whose jobs involve handling poultry and swine be the focus of increased public health surveillance. Other professions at particular risk of infection are veterinarians and meat processing workers, although the risk of infection for both of these groups is lower than that of farm workers (Gray and Kayali, 2009).

2.2.6.3 Interaction with avian H5N1 in pigs

Pigs are unusual as they can be infected with influenza strains that usually infect three different species: pigs, birds and humans. This makes pigs a host where influenza viruses might exchange genes, producing new and dangerous strains. Avian influenza virus H3N2 is endemic in pigs in China and has been detected in pigs in Vietnam, increasing fears of the emergence of new variant strains. H3N2 evolved from H2N2 by antigenic shift. In August 2004, researchers in China found H5N1 in pigs (Thacker and Janke, 2008).

2.2.7 Signs and symptoms

Direct transmission of a swine flu virus from pigs to humans is occasionally possible (called zoonotic swine flu). In all, 50 cases are known to have occurred since the first report in medical literature in 1958, which have resulted in a total of six deaths. Of these six people, one was pregnant, one had leukemia, one had Hodgkin disease and two were known to be previously healthy. Despite these apparently low numbers of infections, the true rate of

infection may be higher, since most cases only cause a very mild disease, and will probably never be reported or diagnosed (Myers ,etal, 2007).

According to the Centers for Disease Control and Prevention (CDC), in humans the symptoms of the 2009 "swine flu" H1N1 virus are similar to those of influenza and of influenza -like illness in general. Symptoms include fever, cough, sore throat, body aches, headache, chills and fatigue. The 2009 outbreak has shown an increased percentage of patients reporting diarrhea and vomiting. The 2009 H1N1 virus is not zoonotic swine flu, as it is not transmitted from pigs to humans, but from person to person.

Because these symptoms are not specific to swine flu, a differential diagnosis of probable swine flu requires not only symptoms but also a high likelihood of swine flu due to the person's recent history. For example, during the 2009 swine flu outbreak in the United States, CDC advised physicians to "consider swine influenza infection in the differential diagnosis of patients with acute febrile respiratory illness who have either been in contact with persons with confirmed swine flu, or who were in one of the five U.S. states that have reported swine flu cases or in Mexico during the 7 days preceding their illness onset." A diagnosis of confirmed swine flu requires laboratory testing of a respiratory sample (a simple nose and throat swab) (CDC, 2009).

2.2.8 Diagnosis

The CDC recommends real time RT-PCR as the method of choice for diagnosing H1N1. This method allows a specific diagnosis of novel influenza (H1N1) as opposed to seasonal influenza . Near-patient point of care tests are in development.

2.2.9 Prevention

2.2.9.1 Prevention of human to human transmission:

Influenza spreads between humans when infected people cough or sneeze, then other people breathe in the virus or touch something with the virus on it and then touch their own face. "Avoid touching your eyes, nose or mouth. Germs spread this way." Swine flu cannot be spread by pork products, since the virus is not transmitted through food. The swine flu in humans is most contagious during the first five days of the illness although some people,

most commonly children, can remain contagious for up to ten days. Diagnosis can be made by sending a specimen, collected during the first five days for analysis. Thermal imaging can detect elevated body temperature, one of the signs of the virus H1N1 (Swine influenza). Recommendations to prevent spread of the virus among humans include using standard infection control against influenza . This includes frequent washing of hands with soap and water or with alcohol-based hand sanitizers, especially after being out in public. Chance of transmission is also reduced by disinfecting household surfaces, which can be done effectively with a diluted chlorine bleach solution.

Experts agree that hand washing can help prevent viral infections, including ordinary influenza and the swine flu virus. Also not touching your eyes, nose or mouth with your hands helps to prevent the flu. Influenza can spread in coughs or sneezes, but an increasing body of evidence shows small droplets containing the virus can linger on tabletops, telephones and other surfaces and be transferred via the fingers to the eyes, nose or mouth. Alcohol-based gel or foam hand sanitizers work well to destroy viruses and bacteria. Anyone with flu-like symptoms such as a sudden fever, cough or muscle aches should stay away from work or public transportation and should contact a doctor for advice.

Social distancing is another tactic. It means staying away from other people who might be infected and can include avoiding large gatherings, spreading out a little at work, or perhaps staying home and lying low if an infection is spreading in a community. Public health and other responsible authorities have action plans which may request or require social distancing actions depending on the severity of the outbreak (CDC, 2009).

2.2.10 Treatment

If a person becomes sick with swine flu, antiviral drugs can make the illness milder and make the patient feel better faster. They may also prevent serious flu complications. For treatment, antiviral drugs work best if started soon after getting sick (within 2 days of symptoms). Beside antiviral, supportive care at home or in hospital, focuses on controlling fevers, relieving pain and maintaining fluid balance, as well as identifying and treating any secondary infections or other medical problems. The U.S. Centers for Disease Control and Prevention recommends the use of Tamiflu (oseltamivir) or Relenz

(zanamivir) for the treatment and/or prevention of infection with swine influenza viruses; however, the majority of people infected with the virus make a full recovery without requiring medical attention or antiviral drugs. The virus isolates in the 2009 outbreak have been found resistant to amantadine and rimantadine (FDA, 2009).

2.2.11 Vaccination

Vaccines are available for different kinds of swine flu. The U.S. Food and Drug Administration (FDA) approved the new swine flu vaccine for use in the United States on September 15, 2009. Studies by the National Institutes of Health (NIH), show that a single dose creates enough antibodies to protect against the virus within about 10 days.

The best way to prevent novel H1N1 swine flu would be the same best way to prevent other influenza infections, and that is vaccination. The CDC has multiple recommendations for vaccination based on who should obtain the first doses when the vaccine becomes available (to protect the most susceptible populations) and according to age groups. The CDC based the recommendations on data obtained from vaccine trials and infection reports gathered over the last few months. The current (October 2009) vaccine recommendations from the CDC say the following groups should get the vaccine as soon as it is available: pregnant women, people who live with or provide care for children younger than 6 months of age, health-care and emergency medical services personnel, people between 6 months and 24 years of age, and people from the ages of 25 through 64 who are at higher risk because of chronic health disorders such as asthma, diabetes, or a weakened immune system.

Currently, the CDC is stating that people ages 10 and above are likely to need only one vaccine shot to provide protection against novel H1N1 swine flu and further suggest that these shots will be effective in about 76% of people who obtain the vaccine. New vaccine trial data showed that healthy adults produce protective antibodies in about 98% of people in 21 days. Unfortunately, the vaccine shot in children ages 6 months to 9 years of age is not as effective as it is in older children and adults. Consequently, the CDC currently recommends that for ages 6 months up to and including 9 years of age, the children obtain two shots of the novel H1N1 vaccine, the second shot 21 days after the first shot.

Pregnant women are strongly advised to get vaccinated as stated above. Although some vaccine preparations (multi dose vials) contain low levels of thimerosal preservative (a

mercury-containing preservative), the CDC still considers the vaccine safe for the fetus and mother. However, some vaccine preparations that are in single-dose vials will not have thimerosal preservative, so those pregnant individuals who are concerned about thimerosal can get this vaccine preparation when it is available.

Another type of vaccine (currently named Influenza A [H1N1] 2009 Monovalent Vaccine Live, Intranasal) has been made available during the first week in October 2009. It is a live attenuated novel H1N1 flu vaccine that contains no thimerosal, is produced by Med Immune, and is sprayed into the nostrils. This vaccine is only for healthy people 2-49 years of age, and some data suggest that it is less effective in generating an immune response in adults than the vaccine injection. The dosing schedule is as follows:

Children 2-9 years of age should receive two doses (0.1 ml in each nostril; total equals 0.2 ml per dose) the second dose should be given the same way about one month after the first dose. Children, adolescents and adults, 10-49 years of age should receive one dose (0.1 ml in each nostril; total equals 0.2 ml per dose)

The CDC occasionally makes changes and updates its information on vaccines and other recommendations about the current flu pandemic.

The CDC says that a good way to prevent any flu disease is to avoid exposure to the virus; this is done by frequent hand washing, not touching your hands to your face (especially the nose and mouth), and avoiding any close proximity to or touching any person who may have flu symptoms. Since the virus can remain viable and infectious for about 48 hours on many surfaces, good hygiene and cleaning with soap and water or alcohol-based hand disinfectants are also recommended. Some physicians say face masks may help prevent getting airborne flu viruses (for example, from a cough or sneeze), but others think the better use for masks would be on those people who have symptoms and sneeze or cough. The use of Tamiflu or Relenza may help prevent the flu if taken before symptoms develop or reduce symptoms if taken within about 48 hours after symptoms develop. Some investigators say that administration of these drugs is still useful after 48 hours, especially in high-risk patient populations. However, taking these drugs is not routinely recommended for prevention for the healthy population because investigators suggest that as occurs with most drugs, flu strains will develop resistance to these medications. Recently, the CDC made further suggestions about the use of these antiviral medications. Dr. Schuchat, a CDC

official, indicated that three modifications were being suggested (Sept. 8, 2009) to the interim guidelines for use of Tamiflu and Relenza:

1. Patients with high-risk factors should discuss flu symptoms and when to use antiviral medications; doctors should provide a prescription for the antiviral drug for the patient to use if the patient is exposed to flu or develops flu-like symptoms without having to go in to see the doctor.
2. "Watchful waiting" was added as a response to taking antiviral medications, with the emphasis on the fact that those people who develop fever and have a preexisting health condition should then begin the antiviral medication.
3. The antiviral medications are the first-line medicines for treatment of novel H1N1 swine flu, and most current cases of flu are novel H1N1 and are, to date, susceptible to Tami flu and Relenza. In general, preventive measures to prevent the spread of flu are often undertaken by those people who have symptoms. Symptomatic people should stay at home, avoid crowds, and take off from work or school until the disease is no longer transmittable (about two to three weeks) or until medical help and advice is sought. Sneezing, coughing, and nasal secretions need to be kept away from other people; simply using tissues and disposing of them will help others. Quarantining patients is usually not warranted, but such measures depend on the severity of the disease. The CDC recommends that people who appear to have an influenza -like illness upon arrival at work or school or become ill during the day be promptly separated from other people and be advised to go home until at least 24 hours after they are free of fever (37.8 C or greater), or signs of a fever, without the use of fever-reducing medications. The novel H1N1 swine flu disease takes about seven to 10 days before fevers stop, but new research data suggests waiting until the cough is gone since many people are still infectious about one week after fever is gone (www.medicinenet.com, 2009).

2.3 Studies review

2.3.1 Studies concern with knowledge, attitudes and practices towards pandemic influenza

In study of knowledge, attitudes and practices towards pandemic influenza among cases, close contacts, and healthcare workers in tropical Singapore: a cross-sectional survey used to determine the differences in KAP in various different cohorts. Across-sectional knowledge, attitudes and practices survey was used in the Singapore military from in 2009,

among 3054 personnel in four exposure groups - laboratory-confirmed H1N1-2009 cases, close contacts of cases, healthcare workers, and general personnel. The result show that 1063 (34.8%) participants responded. The mean age was 21.4 years old. Close contacts had the highest knowledge score (71.7%) while cases had the highest practice scores (58.8%). There was a strong correlation between knowledge and practice scores and knowledge and attitudes scores. The significant predictors of higher practice scores were higher knowledge scores . The significant predictor for higher knowledge score was being a contact. It was conclude that knowledge is a significant influence on attitudes and practices in a pandemic, and personal experience influences practice behaviors. Efforts should be targeted at educating the general population to improve practices in the current pandemic, as well as for future epidemics (Yap et al, 2010).

In study on knowledge, attitude and practice of pandemic H1N1 influenza prevention in Thailand, the public knowledge, attitude and practice of influenza A (H1N1) prevention, mask wearing performance, as well as their associations were investigated. An analytical cross- sectioned study was performed on 159 of outpatients and their relatives aged 17-80, who attended the department of family medicine in Bangkok, Thailand. Self-administered questionnaire, direct observation and in depth interviews in selected age and sex groups were carried out for data collection during the five months. Result: Approximately two-thirds of subjects had low knowledge scores. On the contrary, the majority of subjects had high score in attitude and practice (98.7% and 76%, respectively). By direct observation, 39 from 44 subjects (88.64%) demonstrated proper mask wearing. From the in-depth interview analysis, the poor awareness was related to the misunderstanding of disease transmission, and had no infected case in their family members or neighbors. There is no statistically significant correlation between knowledge and practice as well as attitude and practice. However, the educational level had statistically significant association with disease prevention knowledge score .The appropriate mass health education and public risk communication should be considered in order to create better understanding and maintain good awareness as well as practice. Further study of the important factors and proper communication strategies would be very beneficial for other emerging diseases prevention and control in the future (Apichaya etal, 2010).

2.3.2 Studies concern with knowledge, attitudes and practices towards influenza vaccination

A cross sectional survey to evaluate knowledge, attitudes and practices (KAP) regarding seasonal influenza vaccination among European travelers to resource-limited destinations, was implemented to investigate (KAP) regarding seasonal influenza vaccination. Questionnaires were distributed in the waiting room to the visitors of the University of Zurich Centre for Travel' Health in 2009. Results show that a response rate of 96.6%, 906 individuals were enrolled and 92.5% provided complete data. Seasonal influenza vaccination coverage was 13.7%. Only 14.2% participants were vaccinated against pandemic influenza A/H1N1, mostly having received both vaccines simultaneously, the seasonal and pandemic one. Job-related purposes (44, 37%),.Influenza vaccination recommended by the family doctor (327, 37.7%), travel to regions with known high risk of influenza (305, 35.1%), and influenza vaccination required for job purposes (26.8%) were most frequently mentioned to consider influenza vaccination. Risk perception and vaccination coverage concerning seasonal and pandemic influenza was very poor among travellers to resource-limited destinations when compared to traditional at-risk groups. Previous access to influenza vaccination substantially facilitated vaccinations in the subsequent year. Information strategies about influenza should be intensified and include health professionals, e.g. family physicians, travel medicine practitioners and business enterprises (Pfeil etal, 2010).

In a study on the determinants targeted to increase influenza vaccination uptake among health care workers in nursing homes, it has been showed that although health care workers (HCWs) have been recommended to be immunized against influenza , vaccine uptake remains low. So far, research on determinants of influenza vaccination among HCWs has been limited by design, population or theoretical framework. Therefore we conducted a questionnaire study in Dutch nursing homes to assess which demographical, behavioral and organizational determinants were associated with influenza vaccine uptake among HCWs. We were able to accurately predict vaccine uptake based on a 13-item prediction model including two demographical, nine behavioral and two organizational determinants developed with data from 1,125 respondents (response rate 60%). To further increase

influenza vaccine uptake, implementation programs should target these determinants (Looijmans et al, 2010).

In a study on rates of influenza vaccination in older adults and factors associated with vaccine use, a secondary analysis of the Canadian Study of Health and Aging, in order to determine which segments of the older adult population might be targeted to increase coverage in influenza vaccination programs. The Canadian Study of Health and Aging is a population-based national cohort study of 10263 older adults (≥ 65) conducted in 1991. The data used were from the 5007 community-dwelling participants in the CSHA without dementia for whom self-reported influenza vaccination status is known. The results show that 5007 respondents, 55.2% reported having received an influenza vaccination within the previous 2 years. The largest predictive factors for flu vaccination included: being married 52.6%, having attained a higher education 11%, smoking 57.1% , alcohol use 57.9% , regular exercise 56.8 % and urban living 55.8%.. Factors retaining significance in a multivariate analysis included older age, higher education, married status, drinking alcohol, smoking, engaging in regular exercise, and having higher co morbidity. The vaccination rate in this sample, in whom influenza vaccination is indicated, was low (55.2%). Even in a publicly administered health care setting, influenza vaccination did not reach an important proportion of the elderly population. Whether these differences reflect patient preference or access remains to be determined (Andrew et al, 2004).

A study on factors which affecting on influenza vaccine uptake among health care workers, had been conducted to assess personal and organizational factors associated with influenza immunization uptake among Health Care Workers (HCWs). A cross sectional survey of all HCWs within the Health and Social Care Trusts in Northern Ireland and a parallel-group study of nursing staff within Elderly Care using self-administered questionnaires. The result show that 203 nurses working in elderly care units37% were immunized and 63% declined. Almost 70% of those not immunized perceived themselves to be ‘healthy’ and gave this reason for declining immunization. Nurses were more likely to be immunized by a factor of four if they believed there was benefit for healthy HCWs, three if they felt at-risk of contracting influenza and nine on a recommendation from the occupational health (OH) unit. Fifteen OH units participated in a survey of HCWs at the time of immunization. Five thousand two hundred and thirty of HCWs were immunized. Uptake of influenza

immunization is low. Attitudes to one's health and to the value of influenza immunization affect the uptake as does the delivery of the immunization program (O'Reilly etal, 2001).

A study on knowledge, attitude and practice survey on immunization service delivery in Guangxi and Gansu. China Was conducted to provide baseline information for a health education program. KAP surveys were conducted in 12 randomly selected counties from high and low quality immunization service delivery area in Guangxi and Gansu Provinces. Care takers of 2520 children born in 1995 and 637 immunization providers were selected by probability proportional to size sampling. The result show that the level of immunization knowledge among parents was positively associated with attitude and practices of immunization. Immunization coverage was 89.3% in the high and 63.8% in the low service areas. Low coverage was associated with the number of immunization service sessions per year, fee for immunization services and health insurance schemes for immunization services. Immunization coverage can be improved by ensuring sufficient immunization service sessions per year, reducing the cost of immunization services and increasing the participation in health insurance schemes for immunization services (Xingu etal, 2010).

2.3.3 Studies concern with influenza and special groups

A study on severe 2009 H1N1 influenza in pregnant and postpartum women in California. Astatewide surveillance for patients who were hospitalized with or died from 2009 H1N1 influenza was initiated by the California Department of Public Health. The study reviewed demographic and clinical data reported from in 2009, for all H1N1-infected, reproductive-age women who were hospitalized or died non pregnant women, pregnant women, and postpartum women (those who had delivered ≤2 weeks previously). Results Data were reported for 94 pregnant women, 8 postpartum women, and 137 non pregnant women of reproductive age who were hospitalized with 2009 H1N1 influenza . Rapid antigen tests were falsely negative in 38% of the patients tested (58 of 153). Most pregnant patients (95%) were in the second or third trimester, and approximately one third (34%) had established risk factors for complications from influenza other than pregnancy. As compared with early antiviral treatment (administered ≤2 days after symptom onset) in pregnant women, later treatment was associated with admission to an intensive care unit

(ICU) or death (relative risk, 4.3). In all, 18 pregnant women and 4 postpartum women 22% required intensive care, and (8%) died. Six deliveries occurred in the ICU, including four emergency cesarean deliveries. The 2009 H1N1 influenza can cause severe illness and death in pregnant and postpartum women; regardless of the results of rapid antigen testing, prompt evaluation and antiviral treatment of influenza -like illness should be considered in such women. The high cause-specific maternal mortality rate suggests that 2009 H1N1 influenza may increase the 2009 maternal mortality ratio in the United States (Janice et al, 2010).

In a study of factors influencing the wearing of facemasks to prevent the severe acute respiratory syndrome among adult Chinese in Hong Kong aimed to determine factors associated with individuals' practice of the target SARS preventive behavior (facemask wearing). A total of 1329 adult Chinese residing in Hong Kong were surveyed. The survey instrument included demographic data, measures on the five components of the Health Belief Model, and the practice of the target SARS preventive behavior. Logistic regression analyses were conducted to determine rates and predictors of facemask wearing. The result show that 61.2% of the respondents reported consistent use of facemasks to prevent SARS. Women, the 50–59 age group, and married respondents were more likely to wear facemasks. Three of the five components of the Health Belief Model, namely, perceived susceptibility, cues to action, and perceived benefits, were significant predictors of facemask-wearing even after considering effects of demographic characteristics. The Health Belief Model is useful in identifying determinants of facemask wearing. Findings have significant implications in enhancing the effectiveness of SARS prevention programs (Tang & Wong , 2004).

2.3.4 Studies concern with influenza and community

In a study on the community's attitude towards swine flu and pandemic influenza . To ascertain the beliefs, perceived risks and initial attitudes of the Australian community towards the influenza pandemic declared by the WHO in response to the emergence of an A (H1N1) influenza subtype. A cross-sectional survey of Sydney residents during WHO Phase 5 of pandemic (H1N1) 2009. Members of the public were approached in shopping and pedestrian malls in seven areas of Sydney between 2 May and 29 May 2009 to

undertake the survey. The result show that 620 respondents, 96% were aware of pandemic (H1N1), but 44% felt they did not have enough information about the situation. More than a third 38% ranked their risk of catching influenza during a pandemic as low. When asked how they felt pandemic influenza would affect their health if they were infected; only a third 33% said "very seriously". Just over half of the respondents 58% believed the pandemic would be over within a year. Respondents rated quarantine and vaccination with a pandemic vaccine as more effective than hand hygiene for the prevention of pandemic influenza . Emphasizing the efficacy of recommended actions (such as hand hygiene), risks from the disease and the possible duration of the outbreak may help to promote compliance with official advice (Seale et al, 2009).

A study on the initial psychological responses to influenza A, H1N1 (Swine flu) was conducted to examine initial behavioral and attitudinal responses towards Influenza . Across-sectional Internet or paper-based questionnaire study in Malaysia (N = 180) or Europe (N = 148). Measures assessed changes in transport usage, purchase of preparatory goods for a pandemic, perceived risk groups, indicators of anxiety, assessed estimated mortality rates for seasonal flu, effectiveness of seasonal flu vaccination, and changes in pork consumption. The result show that 26% of the respondents were 'very concerned' about being a flu victim (42% Malaysians, 5% Europeans), 36% reported reduced public transport use (48% Malaysia, 22% Europe), 39% flight cancellations (56% Malaysia, 17% Europe). 8% had purchased preparatory materials (e.g. face masks: 8% Malaysia, 7% Europe), 41% Malaysia and 15% Europe intended to do and 63% of Europeans, 19% of Malaysians had discussed the pandemic with friends. Groups seen as at 'high risk' of infection included the immune compromised individually (mentioned by 87% respondents), pig farmers (70%), elderly (57%), prostitutes/highly sexually active (53%), and the homeless (53%). In data collected only in Europe, 64% greatly underestimated the mortality rates of seasonal flu, 26% believed seasonal flu vaccination gave protection against swine flu. 7% had reduced/stopped eating pork, 3% had purchased anti-viral drugs for use at home, while 32% intended to do so if the pandemic worsened. Initial responses to Influenza A show large regional differences in anxiety, with Malaysians more anxious and more likely to reduce travel and to buy masks and food. Discussions with family and friends may reinforce existing anxiety levels. Particular groups (homosexuals, prostitutes, the homeless)

are perceived as at greater risk, potentially leading to increased prejudice during a pandemic (Goodwin et al, 2009).

A study on anticipated and current preventive behaviors in response to an anticipated human-to-human H5N1 epidemic in the Hong Kong Chinese general population was conducted to assess preventive behaviors in response to an anticipated local human to human H5N1 transmission outbreak and factors associated with such behaviors. A random, anonymous, cross-sectional telephone survey of 503 Hong Kong Chinese adults. Results**:** The public in Hong Kong is likely to adopt self-protective behaviors (e.g., wearing face mask in public venues (73.8%), increasing the frequency of hand washing (86.7%)) and behaviors that protect others (e.g., wearing face masks when experiencing influenza -like illness (92.4%), immediately seeking medical consultation (94.2%), making declarations when crossing the border with ILI (87.1%), complying to quarantine policies (88.3%)). Multivariate analyses indicated that factors related to age, full-time employment, perceived susceptibility, perceived efficacy of preventive measures, perceived higher fatality as compared to SARS, perceived chance of a major local outbreak, and being worried about self/family members contracting the virus were significantly associated with the inclination to adopt self-protective measures. Similar analyses showed that education level, variables related to perceived efficacy, perceived major local outbreak and such were significantly associated with various behaviors directed towards protecting others. In the event of a human-to-human H5N1 outbreak, the public in Hong Kong is likely to adopt preventive measures that may help contain the spread of the virus in the community (Lau et al, 2007)**.**

In study Monitoring community responses to the SARS epidemic in Hong Kong from day 10 to day 62, to report the evolution in perceptions and behaviours of the general public in response to the severe acute respiratory syndrome (SARS) epidemic in Hong Kong. Ten similar and sequential telephone surveys were conducted during outbreak of SARS, which are classified as belonging to the first and second phases of the epidemic. Results show that most of the respondents believed that SARS could be transmitted via direct body contact and droplets. About half of respondents believed that SARS was curable, which increased in the initial phase and decreased in the second phase. Perceived chance of infection was low 9% but fear of infection in public places was high 48%. Perceived efficacy of hygiene measures (wearing a mask: 82%, hand washing: 93%, and home disinfection: 75%remained

high in both phases and the perceived efficacy of avoiding crowded place, and using public transportation, etc, increased initially and decreased in the second phase. In parallel, use of the three hygiene measures increased significantly in the first phase and remained high for wearing a mask and washing hands in the second phase. Percentages of people avoiding crowded place and public transportation significantly increased initially and decreased in the second phase. SARS related perceptions and behaviours evolved rapidly during the epidemic and Hong Kong residents quickly adopted appropriate SARS prevention measures. Timely dissemination of information seems effective in public health crises management (Lau, 2003).

Summary of previous studies

It was conclude that knowledge is a significant influence on attitudes and practices in a pandemic, and personal experience influences practice behaviors. The 2009 H1N1 influenza can cause severe illness and death in pregnant and postpartum women. Risk perception and vaccination coverage concerning seasonal and pandemic influenza was very poor among travellers to resource limited destinations when compared to traditional at risk groups. Even in a publicly administered health care setting, influenza vaccination did not reach an important proportion of the elderly population. Respondents rated quarantine and vaccination with a pandemic vaccine as more effective than hand hygiene for the prevention of pandemic influenza The appropriate mass health education and public risk communication should be considered in order to create better understanding and maintain good awareness as well as practice.

Finally Studies indicate that there is a relationship between knowledge and practices among health care providers. Also health care providers who closed with patients have more knowledge and practices than other care providers because of directly dealing with patients is more likely to take prevention and they exposed to public inquiries Hence they are More

familiar than others.The researcher finds that these studies support the results and there is consensus between the findings of previous studies, also confirms that the health care provider in the Gaza Strip resemble its counterparts in other countries, and demonstrates that health care provider in Gaza Strip care and prevention and health education may exceed in some cases, some developed countries for health.

Chapter Three

Methodology

3.1 Introduction

To implement this study, the researcher followed the appropriate steps of methodology mentioned in the thesis guidelines for student of high studies in Al Quds University. The guidelines include the study design, the study sample, the study instrument measurement tools, data collection, and data processing and analysis. A pilot test was carried out prior to the start of data collection to check ambiguity or confusion in the questions statement. The researcher applied

the study questioner after receiving an official approval letter from "Helsinki Committee" and also official letters were obtained from the Ministry of Health. A written consent was obtained from each participant, and every participant received a complete explanation about the purpose of the study.

3.2 Study design

The design of this study is a, descriptive analytical design to assess the level of knowledge, attitude and practice regarding swine flu among health care providers in primary health clinics.

This design has been chosen because it is one of the best designs to describe the level of knowledge, attitude and practice. It is less expensive and enables the researcher to meet the study objectives in a short time. It also studies the cause and effect at the same point of time and thus provides some possible indication about causation relationships (Burns and Grove, 1997).

3.3 Study population

The study population consisted of all health care providers in governmental primary healthcare clinics in Gaza Strip. The total number is 1217 providers (282 general practitioner,73 specialist, 92 pharmacist, 372 nurses, 24 midwives, 266 paramedics). (DGPC, 2010).

3.4 Study sample

The sample size was estimated by using Epi-info.6 program (epidemiological information statistical program, version 6 at a 95% confidence interval, the sample size was 308 eligible subjects. The number of participants in each clinic was calculated proportionally according to number of health care providers in each clinic and their levels.

3.5 Sampling process

In Gaza Strip there are 57 clinics distributed in 5 governorates (Rafah, Khan Younis, Middle Zone, Gaza, and North Gaza). The primary health care centers in Gaza governorates have been stratified into three levels (II, III, and IV). The sample of this study consists of 308 subjects, from the whole study (1217) population provider who were working at governmental PHC in Gaza Strip. A sample of five clinics from each level was obtained regarding different geographical areas. convenient sample of 30 providers from each clinic of fourth level, 20 providers from each clinic of third level and 10 providers from each clinic of second level The sample was obtained regarding different profession and different governorates.

3.6 Study setting

The study conducted at governmental PHC in Gaza Strip, at primary health care at three different levels (II, III and IV) in the five governorates of Gaza Strip (North Gaza, Gaza, Mid-zone, Khan Younis, and Rafah).

.**Table (3.1) Sample distribution according to level and place of PHCs.**

Governorates	II	III	IV
Rafah	Al- shaboura clinic	Tal –El Sultan clinic	Rafah martyrs clinic
Khan Younis	Jourt –Elout clinic	Bany –sohaila clinic	Khan Younis martyrs clinic
Middle zone	Al-Burij clinic	Al-Nosisrat clinic	Deir-Elbalah martyrs clinic
Gaza	Atta Habib clinic	Al Shatii martyrs clinic	Al-Sheikh Ridwan clinic
North Gaza	Jabalia camp clinic	Beit –Lahia clinic	Jabalia martyrs clinic

3.7 Eligibility

3.7.1 Inclusion criteria

a. For participants

All health care providers who have been working at governmental PHC during the data collection period from the different categories were included.

b. For clinics

- PHC centers of the MOH sector.
- Clinics from different levels which have been randomly selected.

3.7.2 Exclusion criteria

a. For participants

Health care providers who are have not been working at PHC during the data collection period for any reason (e.g., retirement, death, traveling, etc.).

b. For clinics

• Clinics not chosen by sampling.

• Clinics with special services (UNRWA, psychiatric clinics, military clinics).

3.8 Ethical matters and procedures

An official letter of approval to conduct the study was obtained from the Helsinki Committee in Gaza Strip. Also an official letter was obtained from MOH Director to conduct the study at MOH primary health care centers. Every participant was provided with a full explanation to the questionnaire, both verbal and written attachment. The attachment form included the purpose of the study, assurance about the confidentiality of the information, and the instructions how to respond to the questionnaire. Also it included a statement indicating that the participant has the right to participate or not in this study. The participation was optional, anonymity and confidentiality will be given and maintained. A consent form was obtained from each participant and it well be attached to each questionnaire to ensure their voluntary participation after signing the consent.

3.9 Research instrument

A standardized self-administered questionnaire was used.

3.9.1 Questionnaire design

A questionnaire was designed to cover areas of research topic, knowledge, attitude and practice toward swine flu among health care providers in primary health clinics, and to meet the study objectives. The questionnaire was constructed and prepared designed in Arabic language. It was revised by both experienced people in public health and expert in environmental health. It was composed of close ended questions and consists of five parts, the first part of the questionnaire is personal information, the second part of the questionnaire includes knowledge measurement scale about swine flu consisting of 14 questions, the third part of the questionnaire includes attitude measurement scale about swine flu consisting of 11 questions, the fourth part of the questionnaire includes practice measurement scale about swine flu consisting of 9 questions, the fifth part of the questionnaire includes source of information question. Explanation was given just to avoid mistakes in wording of the questions to the subjects during data collection, so that the subjects clearly understood the questions.

3.9.2 Validity and reliability

3.9.2.1 Face and content validity:

The study instrument was constructed after reviewing the literature which related to the study then sent with the objectives of the study in enclosed covering letter to 7 experts working in the public health and epidemiology, in order to give their views on the dimension of statements of the questionnaire. According to their suggestions and advice, the researcher modified some of the questions to be more suitable for achieving the objectives of the study.

3.9.2.2 Reliability of the instrument

The researcher used the Cronbach alpha coefficient to test the reliability of the instrument.

Reliability for knowledge scale check list

The researcher estimated the reliability of the Knowledge scale by using the equation of Cronbach's alpha (No. of items = 14); where the value of alpha = (0.759). Then Knowledge scale checklist measurement device is valid and reliable .

Reliability for attitude scale check list

The researcher estimated the reliability of the Attitude scale by using the equation of Cronbach's alpha (No. of items = 11); where the value of alpha= (0.634).

Reliability for practice scale check list

The researcher estimated the reliability of the practice scale by using the equation of Cronbach's alpha (No. of items = 9); where the value of alpha= (0.859). Then practice scale is valid and reliable.

3.10 Pilot study

Pilot study was conducted on 30 subjects before the start of actual data collection, in order to provide feedback about the questionnaire and ensure validity and reliability of the questionnaire. A pilot study subjects were excluded from the study sample. And after pilot study and modify some of question , the researcher was start the data collection.

3.11 Data collection

Data were collected by the researcher. The average time for each questionnaire was 20 minutes, the data were collected in the same day for each clinic during the period from 5 to 20 July 2010. The number of respondents of health care providers in the study was 280 of the 300, the response rate was 93.3%.

3.12 Data entry and analysis

Data were carefully checked to exclude incomplete answered question . Two hundred and eighty tilled questionnaires were processed and entered into computer by the researcher on statistical package for social science (SPSS) version 14. In this study, the dependent variables were knowledge, attitude, practice among health care providers, and the independent variables were level of clinic, location of clinic, profession type, years of experience, qualification, age and gender of the health care provider. In reporting the results of the study, population distribution, descriptive statics in term of means, percentage were measured for each dependent and independent variables. The researcher used independent sample T test to explore the differences between means, and one way ANOVA to test differences between KAP as dependent variables, and other factors as independent variables.

3.13 Limitations of the study

The researcher faced some limitation during implementing this study such:

- Research resources and previous studies were limited
- Lack of relevant financial resources
- Limitation of time because the time duty of health care provider is limited.

Chapter Four

Results

4.1 Introduction

In this chapter, the researcher will present the main study results based on the results of the statistical analyses. The first part of results is related to the distribution of study population and sample. Frequency of the items and descriptive statistics were used to present data.

The second part relates to the results of the study questions and hypotheses. Knowledge, attitudes and practices toward swine flu among health care providers in primary health clinics in Gaza Strip were the dependent variables. And the possible factors such as age, gender, profession type, years of education, years of experience and source of information represent the independent variables.

4.2 Method of analysis

The researcher conducted population distribution, and a descriptive statistics in terms of means and percentages were measured for each dependent and independent variables. The researcher used an independent sample T test to explore the differences between means, and one way ANOVA to test the differences between KAP as dependent variables, and other factors as independent variables.

4.3 Results

4.3.1 Sample distribution according to gender

The following table (4.2) shows the number and percentage of health care providers according to gender. The table shows that of the total sample (280) males were 133 (about 47.5%) and females were 147 (about 52.5%) of the sample.

Table 4.1: Frequency and percentage of gender

Gender	Frequency	Percent
Male	133	47.5%
Female	147	52.5%
Total	280	100.0

4.3.2 Sample distribution according to age

The following table 4.2 shows the number and a percent of health care providers according to age group. The largest age group of 30-39 years was 110 subjects, about 39.3%, followed by group 40-49 yrs with 68 subjects, about 24.3%,then group 20-29 yrs with 63 subjects, about 22.5%, and group 50-59 yrs with 39 subjects, about (13.9%).

Table 4.2: Frequency and percentage of age groups

Age group	Frequency	Percent
20-29 y	63	22.5%
30-39 y	110	39.3%
40 -49 y	68	24.3%
50-59 y	39	13.9%
Total	280	100.0%

4.3.3 Sample distribution according to place of residence

The following table (4.3) shows the number and percentage of providers according to place of residence in the five governorates of Gaza Strip. There is almost an even distribution, where of total sample of 280 subjects, Rafah had 67 subjects, about 23.9%, Khan Younis 58 subjects, about 20.7%%, Middle zone 45 subjects, about 16.1%, Gaza city 55 subjects, about 19.6% and North Gaza 55 subjects had responding about 19.6%.

Table 4.3: Frequency and percentage according to place of residence

Residency place	Frequency	Percent
Rafah	67	23.9%
Khan Younis	58	20.7%
Middle Zone	45	16.1%
Gaza	55	19.6%
North Gaza	55	19.6%
Total	280	100.0%

4.3.4 Samples distribution according to profession type

The following table (4.4) shows the number and percent of health care providers according to profession type. The results of the study shows that, physician were 82 about 29.3%, nurses 109 about 38.9%, pharmacists 37 about 13,2% and paramedics were 52 subjects responding about 18.6%.

Table 4.4: Frequency and percentage according to profession type

Profession type	Frequency	Percent
Physician	82	29.3%
Nurse	109	38.9%
Pharmacists	37	13.2%
Paramedics	52	18.6%
Total	280	100.0%

4.3.5 Samples distribution according to qualification

The following table (4.5) shows the number and percentage of health care providers according to educational as follows: 96 about 34.3% have Diploma degree, 171 about 61.1 % have bachelor degree, 11 about 3.9% with Master degree and only two about 0.7% have Ph.D. degrees.

Table 4.5: Frequency and percentage according to qualification

Educational qualification	Frequency	Percent
Diploma	96	34.3%
Bachelor	171	61.1%
Master	11	3.9%
PHD	2	0.7%
Total	280	100%

4.3.6 Samples distribution according to experience

The following table (4.6) shows the number and percentage of participants according to their experience, as follows: From 1 to 9 years (n= 119) about 42.5%, from 10 to19 years (n=102) about (36.4%), from 20 to 29 years (n= 40) about 14.3% and from 30 to 49 years (n=19) about 6.8%.

Table 4.6: Frequency and percent according to years of experience

Experience Group	Frequency	Percent
1 - 9 yrs	119	42.5%
10 -19 yrs	102	36.4%
20 – 29 yrs	40	14.3%
30 – 49 yrs	19	6.8%
Total	280	100%

4.4 Results of study questions

4.4.1 Level of knowledge

To determine the level of swine flu knowledge among health care providers, a descriptive statistics including measures of mean, standard deviation and percentage of correct answer score that reflect the level of health care providers knowledge were calculated to show the current level of knowledge of the health care providers shown in table 4.7.

Table 4.7: Mean, standard deviation and percentage of the Level of knowledge

Item	N	Mean	St .deviation
Knowledge	280	33.67	2.67

The second part of the questionnaire contained 14 questions on knowledge of swine flu; the mean of the score was 33.67 with a standard deviation 2.67.

4.4.2 Knowledge categories:

In this study the health care providers were classified into two categories according to their scores. Health care providers with relatively high score are those who have got 33 and above and those with relatively low score are those who have got 32 and less. The numbers and percentages of the participants according to the level of knowledge are shown in table 4.8, and the results on the knowledge items are shown in table 4.9.

Table 4.8: Number and percentage of providers according to level of knowledge category

Level of Knowledge	Frequency	Percent
High knowledge	168	60.0%
Low knowledge	112	40.0%
Total	280	100.0%

As shown in table 4.8. 168 of participants about 60% have high knowledge and 112 of them about 40% have low knowledge about swine flu.

Table 4.9: Percent of knowledge items

Items	Yes	No	Don't know
	%	%	%
Swine influenza is a bacterial disease	1.4	84.1	14.3
First case of swine flu in the Gaza Strip in 2009	74.6	12.9	12.5
Most people most vulnerable to disease who deal with the animals	36.4	59.6	3.9
swine influenza virus cannot transmit from an infected person to the another	16.4	82.1	1.4
In Mexico, the swine flu was spread to the large number because of eating the flesh of swine	50.0	33.6	16.4
Resemble the symptoms of swine flu seasonal influenza (winter)	93.3	5.4	0.7
Swine flu deaths cases more than seasonal influenza	50.4	46.4	3.2
Seasonal influenza vaccines do not provide protection against swine flu	79.6	17.1	3.2
If you discover infected case, must make medical screening to surrounding people	89.2	9.3	1.4
Do you know of any laws to protect against swine flu	55.9	26.2	17.9
The spread of swine flu may occur in any time of the year	73.6	18.2	8.2
(Tami flu) is a successful treatment in the face of the swine flu	58.2	29.3	12.5
Are you familiar with protocol and plan of the Ministry of Health to address this disease	52.1	32.9	15.0

As shown in table 4.9. About 89.2% of participant answered that when discovering infected case, must make medical screening to surrounding people. 93.3% of them answered that resemble the

symptoms of swine flu seasonal influenza (winter) and 73.6% of them answered that the spread of swine flu may occur in any time of the year.

4.4.3 Level of attitude

To determine the level of swine flu attitude among health care providers, a descriptive statistics including measures of mean, standard deviation and percentage of correct answer score that reflect the level of health care providers' attitude were calculated to show the current level of attitude of the health care providers (table 4.10).

Table 4.10: Mean , standard deviation and percentage of the level of attitude

Item	N	Mean	St .deviation
Attitude	280	17.67	2.83

The third part of the questionnaire contained 11 questions on the attitude to swine flu; the mean of the score was 1767 with standard deviation of 2.83.

4.4.4 Attitude categories:

In this study the health care providers were classified into two categories according to their scores. Health care providers with relatively positive score are those who have got 17 and above and those with relatively low score are those who have got 16 and less. The numbers and percentages of the participants according to the level of attitude are shown in table 4.11, and the results on the attitude items are shown in table 4.12.

Table 4.11: Number and percentage of providers according to level of attitude category

Attitude level	Frequency	Percentage
Positive	143	50.9
Negative	137	49.1
Total	280	100

As shown in table 4.11. 143 of participants about 50.9% have positive attitude and 137 of them about 49.1 % have negative attitude toward swine flu.

Table 4.12: Percentage of attitude items

Items	Agree	Not sure	Don't agree
	%	%	%
Thinking that the swine flu is a serious problem facing the Palestinian society	33.9	11.8	54.3
Person who infected with swine flu may die	87.9	6.0	6.1
Thinking that the swine flu could spread again	70.7	25.4	3.9
The best way to protect our country from the swine flu is to read everything about it.	70.0	15.4	14.6
In the Gaza Strip are unable to control the spread of swine flu, if spread again	28.6	30.4	41.1
The best way to prevent flu is to maintain the cleanliness of the environment	78.2	30.4	41.1
Prefer closure of schools and universities in the new event of an outbreak of swine influenza	51.8	9.6	38.6
Vaccination for swine flu protects against infection	36.8	47.9	15.4
Vaccination for swine flu cause many problems	32.6	47.6	28.6
Thinking that the media talk about swine flu problem	79.3	13.2	7.5
Thinking that the information of the swine flu must be met in the early stages of school and university	95.0	2.1	2.9

As shown in table 4.12 about 87.9% of the participant answered that persons infected with swine flu may die. Also about 78.2% of them answered that the best way to prevent flu is to maintain the cleanliness of the environment, 79.3% answered that they think the media talk about swine flu problem and 95.0% answered that they think the information of swine flu must be met in the early stages of school and university.

4.4.5 Level of practice

A descriptive statistics including measures of mean, standard deviation and percentage of correct answer score that reflect the level of health care providers practice were calculated to show the current level of swine flu practice of the health care provider (table 4.13).

Table 4.13: Mean, standard deviation and percentage of the level of practice

Item	N	Mean	St .deviation	Percent
Practice	280	13.41	2.23	60.9%

The fourth part of the questionnaire contained 9 questions on swine flu practice; the mean of the score was 13.41 with standard deviation of 2.23.

4.4. 6 Practice categories:

In this study the health care providers were classified into two categories according to their scores. Health care providers with relatively high score are those who have got 13 and above and those with relatively low score are those who have got 12 and less. The numbers and percentages of the participants according to the level of practice are shown in table 4.14, and the results on the practice items are shown in table 4.15.

Table 4.14: Number and percentage of providers according to level of practice category

Practice	Frequency	Percent
High	182	65.1
Low	98	34.9
Total	280	100.0

As shown in table 4.14. 182 of participants about 65.1% have high practice and 98 of them about 34.9 % have low practice against swine flu.

Table 4.15: Percentage of practice items

Items	Agree	Not sure	Don't agree
	%	%	%
Wearing a mask in public places	63.8	7.5	28.7
Minimizing the social visits	71.4	7.1	21.4
Preventing children and relatives from going to schools and universities	36.1	15.4	48.6
Avoiding being in crowded places	91.8	2.5	5.7
Washing hands thoroughly after shaking hands with an infected person with swine flu	98.6	0.7	0.7
Don't deal with a person infected with swine flu	30.7	15.0	54.0
Will Inform the authorities in case of doubt in the case of suspected swine flu	95.3	4.3	0.4
sharing with counselors and health educators in seminars on swine flu	93.2	5.4	1.4
Taking swine flu vaccination	31.4		68.6

As shown in table 4.15, about 91.8% of the participant answered that to control swine flu they should avoid being in crowded places, 98.6% of them answered that they wash their hands thoroughly after shaking hands with an infected person with swine flu. Also 95.3% of them answered that they will inform the authorities in the case of suspected swine flu case, 93.2% of them answered that they share with counselors and health educators in seminars on swine flu and 68.6% of the participants didn't take swine flu vaccination.

4.5 Answering questions

4.5.1 Knowledge, attitude and practice toward swine flu and profession type

Subjects were divided into four groups according to their profession (physicians, nurses, pharmacist, and paramedics). The researcher used the one-way ANOVA, to explore the relationships among the variables. The results are presented in table 4.16.

Table 4.16: Differences in KAP means squares related to profession type

Dependant variables	Profession Type	Sum of Squares	DF	Mean Square	F	Sig
Knowledge	Between Groups	1.020	3	.340	8.806	0.00
	Within Groups	10.661	276	.039		
	Total	11.682	279			
Attitude	Between Groups	.083	3	.028	.417	0.74
	Within Groups	18.388	276	.067		
	Total	18.472	279			
Practice	Between Groups	.457	3	.152	2.297	0. 06
	Within Groups	16.710	276	.061		
	Total	17.167	279			

From table 4.16, it is shown that there are statistically significant differences between subjects' profession type and their knowledge, and no statistically significant differences between subjects' profession type and their attitude and practice. The knowledge mean square between groups is 0.34 and within groups 0.039, F= 8.806 and P-value is 0.00 which is less than 0.05. That means the difference is very highly statistically significant. The attitude mean square between groups is 0.028 and within groups 0.067, F= .417 and p- value is 0.74 which is >0.05. This means that the difference is not statistically significant. The practice mean square between groups is 0.152 and within groups 0.061, F= 2.297 and p-value is 0.06 which is >0.05 which means that the differences are not statistically significant.

To identify the significant difference between subjects' profession type and their knowledge, Scheffe Post-hoc analysis was used. Table 5.17 shows the results.

Table 4.17: Scheffe Post Test for Knowledge Level and Profession Type

(I) Profession	(J) Profession	Mean Difference (I-J)	Std. Error	Sig.
Physician	**Nurse**	-0.00	0.028	0.997
	Pharmacists	0.07	0.038	0.341
	Paramedics	0.15	0.034	0.00**
Nurse	**Physician**	0.00	0.028	0.997
	Pharmacists	0.07	0.037	0.237
	Paramedics	0.15	0.033	0.00**
Pharmacists	**Physician**	-0.07	0.038	0.341
	Nurse	-0.07	0.037	0.237
	Paramedics	0.07	0.042	0.326
Paramedics	**Physician**	-0.15	0.034	0.00**
	Nurse	-0.15	0.033	0.00**
	Pharmacists	-0.07	0.042	0.326

According to table 4.17, Scheffe Post-hoc test, it is clear that there is a statistically significant difference between subjects profession type and their knowledge and the difference is positive towards physicians and nurses , which means that the highest knowledge is among physician and nurses, and the lowest knowledge was among paramedics.

4.5.2 Knowledge categories and profession type

Cross tabulation was performed to identify if there were any differences between knowledge categories and profession type.

Table (4.18) Cross tabulation of knowledge level according to profession type

Profession	Knowledge level				
	high knowledge	Percent	Low knowledge	Percent	Total
Physician	50	61%	32	39%	82
Nurse	76	69.7%	33	30.3%	109
Pharmacists	21	56.7%	16	45.3%	37
Paramedics	21	40.4%	31	59.6%	52

As shown in table 4.18, about 76 of 109 nurses with percentage of 69.7% have got a score of 33 and above, and 33 of them with a percentage of 30.3% have got 32 and below. While 50 of 82 physicians with a percentage of 61% has got a score of 33 and above, and 32 of them with a percentage of 39 % has got 32 and below. Also 21 of 37 of pharmacists with percentage of 56.7% have got a score of 33 and above, and 16 of them with a percentage of 45.3% have got 32 and below. Only 21 of 52 paramedics, with a percentage of 40.4 % have got of score 33 and above, and 31 of them with percentage of 59.6 % have got 32 and below. That means, the highest knowledge was among nurses and the lowest knowledge was among paramedics. There is no statistically significant difference in the level of attitude and practice among health care providers due to their profession type.

4.5.3 Knowledge, attitude and practice toward swine flu and experience

Subjects divided into four groups according to experience years groups (from 1 to 9 , 10 to19, 20 to 29 and 30 to 40 years) the researcher used the one-way ANOVA, to explore the relationships among variables . The results are presented in table (4.19).

Table 4.19: Differences in KAP means square related to years of experience

Dependant variables	Years of experience	Sum of Squares	DF	Mean Square	F	Sig
knowledge	**Between Groups**	.180	3	.060	1.437	.232
	Within Groups	11.501	275	.042		
	Total	11.681	278			
Attitude	**Between Groups**	.310	3	.103	1.567	.198
	Within Groups	18.157	275	.066		
	Total	18.468	278			
Practice	**Between Groups**	.085	3	.028	.445	.714
	Within Groups	17.057	275	.062		
	Total	17.142	278			

From the above table (4.19), the results show that there are no statistically significant differences between subjects' years of experience and their knowledge, attitude and practice. The knowledge mean square between groups is 0.060 and within groups 0.042, F= 1.437 and p-value is 0.232 which is > 0.05, and this means that there is no statistically significant differences. The attitude mean square between groups is 0.103 and within groups 0.066, F= 1.567 and p-value is 0.198 which is >0.05 which means that there is no statistically significant differences. The practice mean square between groups is 0.028 and within groups 0.062 and F= 0.445 and p-value is 0.714 which is >0.05) which that mean that there is no statistically significant differences. So there is no statistically difference in the level of knowledge, attitude and practice among health care provider attributed to their years of experience.

4.5.4. Knowledge, attitude, practice and age

To test the hypothesis " There is no statistically significant difference in the level of knowledge, attitude and practice among health care providers due to their age" subjects were divided into four groups according to experience years (from 20 to 29, 30 to 39, 40 to 49 and 50 to 59 years) the researcher used the one-way ANOVA to explore the relationships among variables. The results are presented in table 4.20.

Table 4.20: One-Way ANOVA comparison among knowledge, attitude, practice according to age

Dependent variables	Years of Experience	Sum of Squares	DF	Mean Square	F	Sig
Knowledge	Between Groups	.170	3	.057	1.357	.256
	Within Groups	11.512	276	.042		
	Total	11.682	279			
Attitude	Between Groups	.355	3	.118	1.803	.147
	Within Groups	18.117	276	.066		
	Total	18.472	279			
Practice	Between Groups	.084	3	.028	.450	.718
	Within Groups	17.084	276	.062		
	Total	17.167	279			

The above able (4.20) shows that there are no statistically significant differences between subjects age and their knowledge, attitude and practice. The knowledge mean square between groups is 0.57 and within groups 0.042, F= 1.357 and the p-value is 0.25 which is >0.05, this means that there are no statistically significant differences. The attitude mean square between groups is 0.118 and within groups 0.066, F= 1.803 and p-value =0.147 which is >0.05). That means that the difference is not statistically significant. The practice mean square between groups is 0.028 and within groups 0.062, F= .450 and p-value is 0.71 which is 0.05, hence the differences is not statistically significant. So there is no statistically significant difference in the level of knowledge, attitude and practice among health care provider attributed to their age.

4.5.5 Knowledge, attitude, practice and gender

Subjects were divided into two groups (males and female) and the researcher used the T test analysis to find the relationships among the variables. The results are presented in table 4.21.

Table 4.21: Independent sample t test among knowledge, attitude, practice according to gender

Variables	Sex	N	Mean	S. D	S. E Mean	T	Sig.
Knowledge	**Male**	133	2.6143	.19944	.01729	.313	0.50
	Female	147	2.5667	.20728	.01710		
Attitude	**Male**	133	1.6268	.25889	.02245	.350	.225
	Female	147	1.5894	.25544	.02107		
Practice	**Male**	133	1.5174	.26467	.02295	4.152	.112
	Female	147	1.4702	.23062	.01902		

From the above table (4.21) the results show that there is a statistically significant difference between subjects gender and their knowledge, and there are no statistically significant differences between subjects gender and their attitude and practice with p-value much higher than 0.05. There is no statistically significance difference in the level of knowledge, attitude and practice among health care providers due to their gender.

4.5.6 Knowledge categories and gender

Cross tabulation was performed to identify if there were any differences between knowledge categories and gender.

Table 4.22: Cross tabulation of knowledge level according to gender

	Knowledge level				
Gender	**High Knowledge**	**Percentage**	**Low Knowledge**	**Percentage**	**Total**
Male	87	65%	46	35%	133
Female	81	55%	66	45%	147
Total	168		112		280

As shown in table 4.22 above, 87 of 133 (65%) males have got a score of 33 and above, and 46 (35%) have got 32 and below, while 81 (55%) females have got a score of 33 and above, and 66 (45%) have got 32 and below. This indicates that male health care providers have higher knowledge on swine flu than their female colleagues.

4.5.7 Knowledge, attitude, practice and qualification

Subjects divided into four groups according to qualification (diploma, bachelor, Master, PhD). The researcher used the one-way ANOVA to explore the relationships among variables. The results are presented in table 4.23.

Table 4.23: One-way ANOVA comparison among knowledge, attitude, practice according to qualification

Dependant variables	Qualification	Sum of Squares	DF	Mean Square	F	Sig
knowledge	Between Groups	.083	3	.028	.659	.578
	Within Groups	11.599	276	.042		
	Total	11.682	279			
Attitude	Between Groups	.298	3	.099	1.507	.213
	Within Groups	18.174	276	.066		
	Total	18.472	279			
Practice	Between Groups	.113	3	.038	.612	.608
	Within Groups	17.054	276	.062		
	Total	17.167	279			

From the above table (4.23) the results show that there are no statistically significant differences between subjects' qualification and their knowledge, attitude and practice. The knowledge mean square between groups is 0.028 and within groups 0.042, F= 0.659 and p-value is 0.578 which is >0.05. This indicates no statistically significant differences. The attitude mean square between groups is 0.099 within groups 0.066, F= 1.507 and p-value is 0.213) which is >0.05. That means, there are no statistically significant differences. The practice mean square between groups is 0.038, within groups 0.062, F= 0.612 and P- value is 0.608 which is >0.05.this shows a none statistically significant differences. So There is no statistically significant difference in the level of knowledge, attitude and practice among health care providers attributed to their qualification.

4.5.7 Knowledge, attitude, practice and location of PHC center

Subjects were divided into five groups according to location of PHC center (Rafah , Khan Younis , Middle Zone ,Gaza ,North Gaza governorates). The researcher used the one-way ANOVA, to explore the relationships among variables. The results are presented in table 4.24.

Table 4.24: One-way ANOVA comparison among knowledge, attitude, practice according to location of PHC center

Dependant Variables	Location of PHC Center	Sum of Squares	DF	Mean Square	F	Sig
Knowledge	Between Groups	.416	4	.104	2.537	.040
	Within Groups	11.266	275	.041		
	Total	11.682	279			
Attitude	Between Groups	.328	4	.082	1.241	.294
	Within Groups	18.144	275	.066		
	Total	18.472	279			
Practice	Between Groups	.782	4	.195	3.280	.012
	Within Groups	16.386	275	.060		
	Total	17.167	279			

From table 4.24, the results show that there are statistically significant differences between location of PHC center and knowledge and practice with p-values = 0.04 and 0.012 respectively. And there are no statistically significant differences between location of PHC center and attitude with p-value = 0.294. To identify the significant difference between subjects' location of PHC center and subjects' knowledge, Scheffe Post-hoc analysis was used and the results are displayed in table 4.25.

Table 4.25: Scheffe post test for knowledge level and location of PHC center

(I)Location of PHC center	(J)Location of PHC center	Mean Difference (I-J)	Std. Error	Sig.
Rafah	Khan Younis	.04907	.03630	.767
	Middle zone	-.07192	.03901	.495
	Gaza	.01557	.03683	.996
	North Gaza	-.02440	.03683	.979
Khan Younis	Rafah	-.04907	.03630	.767
	Middle zone	-.12098	.04021	.053*
	Gaza	-.03349	.03809	.942
	North Gaza	-.07347	.03809	.447
Middle zone	Rafah	.07192	.03901	.495
	Khan Younis	.12098	.04021	.053*
	Gaza	.08749	.04068	.331
	North Gaza	.04751	.04068	.850
Gaza	Rafah	-.01557	.03683	.996
	Khan Younis	.03349	.03809	.942
	Middle zone	-.08749	.04068	.331
	North Gaza	-.03998	.03860	.898
North Gaza	Rafah	.02440	.03683	.979
	Khan Younis	.07347	.03809	.447
	middle zone	-.04751	.04068	.850
	Gaza	.03998	.03860	.898

* The mean difference is significant at the 0.05 level.

According to table 4.25, Scheffe Post-hoc test shows that there is statistically significant difference between location of PHC centers and the subjects' knowledge.

4.5.9 Knowledge categories and location of PHC center

Cross tabulation was performed to identify if there were any differences between knowledge categories and the location of PHC centers.

Table 4.26: Cross tabulation of knowledge level according to location of PHC center

Knowledge level					
Location	**High knowledge**	**Percent**	**Low knowledge**	**Percent**	**Total**
Rafah	44	65.5%	23	34.5%	67
Khan Younis	26	44.8%	32	55.2%	58
Middle Zone	31	68.9%	14	31.1%	45
Gaza	32	58.2%	23	41.8%	55
North Gaza	35	63.4%	20	36.6%	55
Total	168	60%	112	40%	280

As shown in table 4.26, about 44 (65.5%) of Rafah PHC centers participants have got a score of 33 and above, and 23 (34.5%) have got 32 and below, while 26 (44.8%) of Khan Younis PHC center participants have got a score of 33 and above, and 32 of them 55.2 % have got 32 and below. Also 31 (68.9 %) of the Middle Zone PHC centers have got a score of 33 and above, and 14 (31.1 %) of them have got 32 and below. Thirty two (58.2%) of Gaza PHC center participants have got a score of 33 and above, and 23 (41.8 %) of them have got 32 and below, and 35 (63.4%) of North Gaza PHC centers participants have got a score of 33 and above , and 20 (40 %) of them have got 32 and below . That means that the highest knowledge was in Middle Zone PHC center participants followed by those in Rafah, then North Gaza, Gaza and the lowest knowledge was among Khan Younis PHC center participants of the health care providers.

Table 4.27: Scheffe post test for practice level and location of PHC center

(I) Location of PHC center	(J)Location of PHC center	Mean Difference (I-J)	Std. Error	Sig.
Rafah	**Khan Younis**	.03332	.04378	.965
	Middle Zone	-.09434	.04705	.405
	Gaza	.07757	.04441	.550
	North Gaza	.00080	.04441	1.000
Khan Younis	**Rafah**	-.03332	.04378	.965
	Middle zone	-.12766	.04849	.143
	Gaza	.04425	.04594	.920
	North Gaza	-.03251	.04594	.973
Middle zone	**Rafah**	.09434	.04705	.405
	Khan Younis	.12766	.04849	.143
	Gaza	.17191(*)	.04907	.017*
	North Gaza	.09515	.04907	.441
Gaza	**Rafah**	-.07757	.04441	.550
	Khan Younis	-.04425	.04594	.920
	Middle zone	-.17191(*)	.04907	.017*
	North Gaza	-.07677	.04655	.606
North Gaza	**Rafah**	-.00080	.04441	1.000
	Khan Younis	.03251	.04594	.973
	middle zone	-.09515	.04907	.441
	Gaza	.07677	.04655	.606

* The mean difference is significant at the 0.05 level.

According to table 4.27 Scheffe Post-hoc test shows that there is a statistically significant difference between location of PHC centers and providers practice, and the difference is positively towards Middle Zone and negatively towards Gaza city.

4.4.10 Practice categories and location of PHC center

Cross tabulation was performed to identify if there were any differences between practice categories and location of PHC center.

Table 4.28: Cross tabulation of practice level according to location of PHC center

	Practice Level				
	High practice	**Percentage**	**Low practice**	**Percentage**	**Total**
Rafah	47	70%	20	30%	67
Khan Younis	35	60%	23	40%	58
Middle zone	34	75.5%	11	24.5%	45
Gaza	28	51%	27	49%	55
North Gaza	38	69%	17	31%	55
Total	182	65%	98	35%	280

The data in table 4.28 show that the highest practice among the participants of the Middle Zone PHC centers(75.5%) followed by those Rafah PHC centers(70%), North Gaza PHC center (69%), then Khan Younis (60%) and the lowest practice was among Gaza PHC centers participants of the health care providers.

4.5.11 Knowledge, attitude, practice and level of PHC center

Subjects were divided into three groups according to level of PHC centers (II, III, and IV)**.** The researcher used the one-way ANOVA to explore the relationships among variables and the results are presented in table 4.29.

Table 4.29: One-Way ANOVA comparison among knowledge, attitude, practice according to level of PHC center

	ANOVA	Sum of Squares	DF	Mean Square	F	Sig
Knowledge	Between Groups	.095	2	.048	1.136	.322
	Within Groups	11.587	277	.042		
	Total	11.682	279			
Attitude	Between Groups	.007	2	.004	.055	.946
	Within Groups	18.464	277	.067		
	Total	18.472	279			
Practice	Between Groups	.049	2	.024	.394	.675
	Within Groups	17.119	277	.062		
	Total	17.167	279			

As shown in table 4.29, there are no statistically significant differences between the level of PHC centers and knowledge, attitude and practice with p-values of 0.322, 0.946 and 0.675 respectively. So there is no statistically significant difference in the level of knowledge, attitude and practice among health care providers due to their level of PHC centers.

4.5.12 Source of Information on Swine Flu

The following table shows the numbers and percentages of providers according to Source of their information on swine flu. The results of the study show that of total sample, 142 (50.5%) gain their information from TV, Radio and internet, 127(45.2%) get the information from MOH, and only11subjects (3.9%) gain their information from family and community.

Table 4.29: Number and Percentage of Source of Information on Swine Flu

Source of Information	Frequency	Percent
TV, Radio and internet	142	50.5
Ministry of Health	127	45.2
Family and community	11	3.9
Total	280	100.0

4.5.13 Correlations among knowledge, attitude and practice.

The purpose of this part of the study is to determine if there is a correlation among the dependent variables among health care providers.

Table 4.30: Correlations between knowledge, attitude and practice

variables	Knowledge	
	R	**P- value**
Attitude	-.019	. 756
Practice	-.002	**.**975

**Correlation is significant at the 0.01 level (2-tailed).

Table 4.31: Correlations between attitude and practice

Variables	Attitude	
	R	**P- value**
Practice	.289(**)	.000

**Correlation is significant at the 0.01 level (2-tailed).

As shown in tables 4.30 and 4.31 Pearson correlation coefficient results between attitude and practice indicates that, there is a positive correlation between attitude and practice among the study population (r=0.289). The correlation between levels of attitude and practice reached a strong statistical significance with $p<0.05$, which means that health care providers who have higher attitude are significantly more likely to have higher practice. There is no correlation between knowledge and practice.

Chapter five

Discussion and recommendation

5.1 Introduction

The main aim of this study was to evaluate knowledge, attitudes and practices toward swine flu among health care providers in primary health clinics in Gaza Governorates. This chapter includes the major findings of the study and gives answers to the research questions, recommendations and suggested future studies.

5.2 Main result and discussion

The participating health care providers, knowledge level was high(92%) according to their response to knowledge items, their attitude is less than their knowledge with 65.8%, but practice level was the lowest of 60.9%.

The researcher found that, the result do not mean that the high level of knowledge means an increase in the level of practice and this confirms that knowledge is not index of practice, lot of controls such as the Protocol of work, supervision, guidance and accountability are needed to increase practice. This is indicated by the disparity rates among knowledge, attitudes and practice.

Knowledge, attitude and practice and profession type

There is a statistically significant difference between knowledge and profession type, the difference is positively toward nurses and physicians, where the level of knowledge is the highest among other professions.

There are no statistically significant differences between attitude and practice and profession type. The Researcher found that the addition of nurses to the highest knowledge is because they are more in contact with patients and the public. Yap et al.2010 confirm our result in his study of Knowledge, attitudes and practices towards pandemic influenza among cases, close contacts, and

healthcare workers in tropical Singapore where Close contacts had the highest knowledge score.

Knowledge, attitude and practice and experience

Participants experience years group from 1-9 years was the highest scores about 42.5%, then the group from 10-19 years, of about 36.4%.The result show that experience does not affect knowledge attitude and practice toward swine flu.

Knowledge, attitude and practice and socio demographic factors

The participants' age group between 30-39 years, with a percentage of 39.3, has the highest level of knowledge among them. Also participants' gender, females were higher than males. The participants' age group and gender do not affect knowledge, attitude and practice toward swine flu.

Knowledge, attitude and practice and location of PHC center

There is a statistically significant difference between knowledge and location of PHC centers. The difference was positive toward Mid Zone governorate, where the level of knowledge is the highest among mid zone governorate.

There is a statistically significant difference between practice and location of PHC center, the difference is positively toward Mid Zone governorate, where the level of practice is the highest among mid zone governorate participants of PHC providers.

There is no statistically significant difference between attitude and location of PHC center. The results indicate that the Mid Zone governorate is the highest in knowledge and practice.

Knowledge, attitude and practice and level of PHC center

There is no statistically significant difference between attitude and level of PHC centers. The researcher found that there are no significant differences between the levels of clinics due to the distribution of the Ministry of Health protocol to confront the swine flu, education of workers in clinics and holding workshops that involve all interested parties and the staff who are exposed to the public and patients.

Knowledge, attitude and practice and information

Most of health care providers (50.5%) indicated that television, radio and internet were their major source of information about swine flu, followed by ministry of health with 45.2%, and only 3.9% of the providers mentioned family and community as their source of information.

The researcher looked for the source of information in this study because it was found that each of the psychologists Piaget, Fischer's, Tolman and other see the human being of all ages as integral person who can plan and think a problem, each one has different views of knowledge

which is acquired through experience or by reading, watching television, playing different computer games. But it is not enough for a man to have knowledge only but also to have attitude toward it. The knowledge is the first step for the individual to develop attitudes that motivate him to practice a relevant behavior.

Correlations between knowledge, attitude and practice.

The correlation between levels of attitude and practice was found to be statistically strong. No correlation was found between knowledge and practice which means that health care providers who have higher attitude are significantly more likely to have higher practice. This result supported by Heider (1944) who said that" People who have positive attitudes toward a particular object or event where assumed to be engaged in positive behavior toward it". And if one reads a report about health and believes it came from a professional medical journal, may be more easily persuaded than if one believes it is from a popular newspaper.

Health care providers and H1N1 vaccination

In this study it is shown that 31.4% of participants who took up the swine flu vaccination , were of low percentage, because the 32.6% of providers think that the vaccination for swine flu may cause many problems and 52.1% of the providers were familiar with the protocol and the plan of the Ministry of Health to address this disease. (Looijmans et al, 2010) in a study of the determinants that help to increase influenza vaccination uptake among health care workers in Dutch nursing homes, found that although health care workers (HCWs) have been recommended to be immunized against influenza , vaccine uptake remained low. Also in study on the factors affecting influenza vaccine uptake among health care workers it was show that of 203 nurses working in elderly care units 76(37%) were immunized and 127(63%) declined. Almost 70% of those not immunized perceived themselves to be ‘healthy’ and gave this reason for declining immunization (O’Reilly et al, 2001). In this study the researcher attributes low vaccination rates among health care providers to not being convinced of its efficiency and fear of complications which may be caused by vaccination and also the researcher found that vaccination was imposed and bound to all health care providers to take the vaccination and not be at the option of the individual and this should be done to end the Pandemic.

5.3 Recommendations

1. The appropriate mass health education and public risk communication should be considered in order to create better understanding and maintain good awareness as well as practice.
2. Further study of the important factors and proper communication strategies would be very beneficial for other emerging diseases prevention and control in the future.
3. Knowledge is a significant influence on attitudes formation and practices in a pandemic. Efforts should be targeted at educating the general population to improve practices in the current pandemic, as well as for future epidemics.
4. Timely dissemination of information seems effective in public health crises management.
5. Information strategies about influenza should be intensified and include health professionals, universities, schools, public and business enterprises.
6. Efforts should be made to organize seminars for health care providers to effectively educate the general population on programs for healthful environment.
7. The governmental health media should be more influntial than other media on people and should represent the view of science to end the rumors about pandemics and disease and direct people to good ways of dealing with such problems.
8. The Ministry of Health should pay more supervision and follow-up of the Pandemic and the application of the protocols.
9. The Ministry of Health must convince the health care providers who are exposed and face the public to get a vaccination, and not leave it to the opinion of the person. Those who are not satisfied with vaccine, they would not advise people about vaccination and its benefits.

5.4 Further recommended researches

1. Studying Knowledge, Attitudes and Practices Regarding Swine Flu among Health Care Providers in hospitals.
2. Comparison of Knowledge, Attitudes and Practices Regarding H1N1 among Health Care Providers in Governmental and UNRWA Clinics.
3. Studying Knowledge, Attitudes and Practices Regarding Swine Flu among University Students.
4. Studying Knowledge, Attitudes and Practices Regarding Swine Flu among Teachers.

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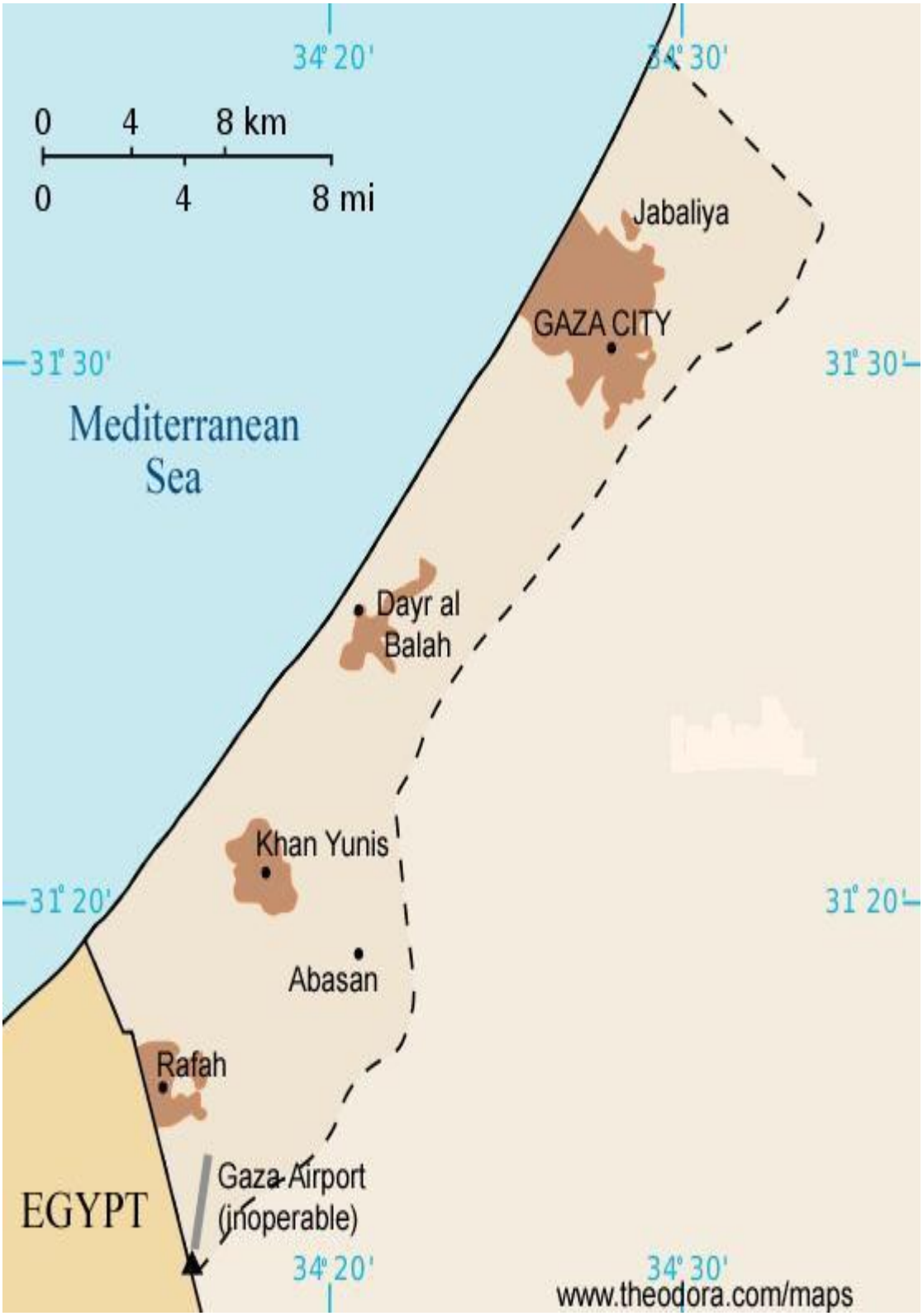
Annex (1) Map of Palestine

Annex (2) Map of Gaza Strip



Annex(3) Arabic consent form

جامعة القدس –أبو ديس

كلية الصحة العامة

عزيزي الموظف / عزيزتي الموظفة

يسعدني مشاركتك الفعالة في بحث بعنوان

Knowledge, Attitudes And Practices Regarding H1N1 (Swine Flu) Among Health Care Providers In Primary Health Center

هذه الدراسة يقوم بها الباحث كمتطلب للحصول على درجة الماجستير (صحة بيئية) بجامعة القدس أبو ديس كلية الصحة العامة

ان مشاركتكم تسهم في إنجاح الدراسة التي تهدف للتعرف على مدى معرفة وتوجهات وتطبيق مقدمي الرعاية الصحية في عيادات الرعاية الأولية في مواجهة أنفلونزا الخنازير .

يود الباحث التأكيد على أن المعلومات ستبقى سرية و لهدف البحث العلمي لذلك لا داعي لذكر الأسماء

علما بأنه من حق الموظف الامتناع عن إجابة أي سؤال أو رفض المشاركة.

شكرا لكم على المشاركة

الباحث يوسف فتحي فحجان

مستشفى النجار- مكتب التمريض

0599862873 جوال

مكان العيادة : رفح خانيونس الوسطى غزة الشمال

مستوى العيادة : أول ثاني ثالث رابع

Annex (4) Arabic questionnaire

استبيـــــان

أولا : البيانات الشخصية

1. العمر :
2. الجنس : ذكر أنثى
3. مكان السكن : رفح خانيونس الوسطى غزة الشمال
4. المهنة : طبيب حكيم صيدلي فني مختبر فني أشعة أخرى
5. المؤهل العلمي: دبلوم بكالوريوس ماجستير دكتوراه
6. عدد سنوات الخبرة:

ثانياً : اختبار مقياس المعرفة

م	الجملة	نعم	لا	لا أعرف
7.	أنفلونزا الخنازير مرض بكتيري			
8.	أول إصابة بأنفلونزا الخنازير في قطاع غزة في 2009م			
9.	ينتقل الفيروس من إنسان إلى إنسان بالاحتكاك المباشر			
10.	أكثر الناس عرضة للمرض الأكثر تواصلا مع الحيوانات			
11.	لا يمكن انتقال فيروس أنفلونزا الخنازير من شخص مصاب الى سليم			
12.	أكثر انتشار لأنفلونزا الخنازير في المكسيك لكثرة أكلهم للحم الخنازير			
13.	أعراض أنفلونزا الخنازير يشابه الأنفلونزا الموسمية(فصل الشتاء)			
14.	حالات وفيات أنفلونزا الخنازير أكثر من الأنفلونزا الموسمية			
15.	لقاحات الأنفلونزا العادية لا توفر الحماية من أنفلونزا الخنازير			
16.	إذا تم اكتشاف حالة بشرية مصابة يجب عمل مسح طبي لكل المحيطين			
17.	هل تعلم بوجود اى قوانين للحماية من مرض انفلونزا الخنازير			
18.	قد يحدث انتشار انفلونزا الخنازير في أي وقت من أوقات العام			

19.	يعتبر علاجا ناجحا في مواجهة انفلونزا الخنازير(Tami flu)			
20.	هل انت على معرفة ببروتوكول وخطة وزارة الصحة لمواجهة هذا المرض			

ثالثاً: مقياس اتجاه الفرد مع أنفلونزا الخنازير:

يرجى قراءة كل عبارة قراءة متأنية وتحديد مدى موافقتك عليها أو رفضك لها في المربع المقابل .

م	الجملة	أوافق	لست متأكد	لا أوافق
21.	اعتقد أن أنفلونزا الخنازير مشكلة خطيرة يواجهها المجتمع الفلسطيني			
22.	يمكن للإنسان المصاب بأنفلونزا الخنازير أن يموت			
23.	اعتقد أن أنفلونزا الخنازير قد تنتشر مرة أخرى			
24.	أفضل طريقة لحماية بلدنا من أنفلونزا الخنازير قراءة كل شئ عنها			
25.	أرى إننا في غزة غير قادرين على السيطرة على أنفلونزا الخنازير إذا انتشر مرة أخرى			
26.	اعتقد ان أفضل وسيلة لمنع أنفلونزا الخنازير هو المحافظة على نظافة البيئة			
27.	أفضل إغلاق المدارس والجامعات في حال انتشار أنفلونزا الخنازير من جديد			
28.	أعتقد بان التطعيم الخاص بأنفلونزا الخنازير يحمي من الإصابة			
29.	أعتقد بان التطعيم الخاص بأنفلونزا الخنازير يسبب مشاكل كثيرة			
30.	اعتقد ان وسائل الاعلام تتحدث مشكلة أنفلونزا الخنازير			
31.	اعتقد ان المعلومات المتعلقة أنفلونزا الخنازير يجب توافرها في المراحل المدرسية والجامعية			

رابعا: مقياس سلوك الفرد مع أنفلونزا الخنازير:

	الجملة	أوافق	**لست متاكد**	لا أوافق
32.	أرتدي الكمامة في الأماكن العامة			
33.	أقلل من الزيارات الاجتماعية			
34.	أمنع أبنائي وأقاربي من الذهاب للمدارس والجامعات			
35.	أتجنب الوجود في الأماكن المزدحمة			
36.	اغسل يدي جيدا بعد مصافحة شخص مصاب بأنفلونزا الخنازير			
37.	لا أتعامل مع شخص مصاب بأنفلونزا الخنازير			
38.	أبلغ الجهات المختصة في حال الشك في حالة اشتباه بأنفلونزا الخنازير			
39.	أشارك مع مرشدين ومثقفين صحيين في ندوات حول أنفلونزا الخنازير			
40.	قمت باخذ التطعيم الخاص بأنفلونزا الخنازير			

خامسا / مصدر المعلومات:

من أين حصلت على أكثر معلوماتك عن أنفلونزا الخنازير

الاجابة على اكثر المصادر لمعلوماتك (واحدة فقط)

التلفزيون و الراديو و الانترنت ☐

وزارة الصحة ☐

العائلة و المجتمع ☐

شكرا لمشاركتكم

Annexes (5) consent form to scientific advice

جامعة القدس –أبو ديس
كلية الصحة العامة

السيد الدكتور \ _____ المحترم

يسعدني مشورتك العلمية في تحكيم استبيان بحث بعنوان

Knowledge, Attitudes and Practices Regarding H1N1 (Swine Flu) Among Health Care Providers in Primary Health Center

هذه الدراسة يقوم بها الباحث كمتطلب للحصول على درجة الماجستير (صحة بيئية) بجامعة القدس أبو ديس كلية الصحة العامة فمشورتكم تسهم في إنجاح الدراسة التي تهدف للتعرف على مدى معرفة وتوجهات وتطبيق مقدمي الرعاية الصحية في عيادات الرعاية الأولية في مواجهة أنفلونزا الخنازير .

شكرا لكم على مساعدتي

الباحث يوسف فتحي فحجان
مستشفى النجار- مكتب التمريض
جوال 0599862873

Annexes (6) English consent form

Al Quds University

School of Public Health

Dear Employee

I am pleased your message effectively in a research entitled

Knowledge, Attitudes and Practices Regarding H1N1 (Swine Flu) Among Health Care Providers in Primary Health Center

This study carried out by the researcher as a requirement to obtain a master's degree (environmental health) at the University of Jerusalem, Abu Dis School of Public Health that your participation contributes to the success of the study aimed to identify the knowledge, attitudes and application of health care providers in clinics, primary care in the face of swine flu.

Researcher wishes to emphasize that the information will remain confidential and for the purpose of scientific research that does not need to mention names

Note that the employee has the right to refrain from answer any questions or refused to participate.

Thank you for your participation

Researcher : Yousef Fathi Fahajan

Al Najar Hospital - Nursing Office

Mobile 0599862873

Place of clinic :	Rafah	Khan Younis	Middle Zone	Gaza	North Gaza
Level of clinic:	II	III	IV		

Annexes (7) English Questionnaire
Questionnaire

Firs: General information

1. **Age** _____
2. **Gender** : Male Female
3. **Place of residence :** Rafah Khan Younis Middle Zone Gaza North Gaza
4. **Profession** : physician nurse pharmacist paramedics
5. **Scientific qualification:** Diploma Bachelor Master PhD
6. **Years of experience** _____

Second: knowledge scale items

Item	Yes	No	Don't know
Swine influenza is a bacterial disease			
First case of swine flu in the Gaza Strip in 2009			
Most people most vulnerable to disease who deal with the animals			
swine influenza virus cant transmit from an infected person to the another			
In Mexico , the swine flu was spread to the large number because of eating the flesh of swine .			
Resemble the symptoms of swine flu seasonal influenza (winter)			
swine flu deaths cases more than seasonal influenza			
Seasonal influenza vaccines do not provide protection against swine flu			
If you discover infected case ,must make medical screening to surrounding people			
Do you know of any laws to protect against swine flu			
the spread of swine flu may occur in any time of the year			
(Tami flu) is a successful treatment in the face of the swine flu			
Are you familiar with protocol and plan of the Ministry of Health to address this disease			

Third: Attitude scale items

Please read each statement carefully read and determine the extent of your agreement or refusal in the corresponding box

Item	**Agree**	**Not sure**	**Don't agree**
I think that the swine flu is a serious problem facing the Palestinian society			
a person who infected with swine flu may die			
I think that the swine flu could spread again			
The best way to protect our country from the swine flu read everything about it.			
I think we in the Gaza Strip are unable to control the spread of swine flu, if spread again			
I think the best way to prevent flu is to maintain the cleanliness of the environment			
I prefer closure of schools and universities in the new event of an outbreak of swine influenza			
I think that the vaccination for swine flu protects against infection			
I think that the vaccination for swine flu cause many problems			
I think that the media talk about swine flu problem			
I think that the information of the swine flu must be met in the early stages of school and university			

Fourth: practice scale items

Please read each statement carefully read and determine the extent of your agreement or refusal in the corresponding box

Item	**Agree**	**Not sure**	**Don't agree**
I wear a mask in public places			
I minimize the social visits			
I prevent my children and relatives from going to schools and universities			
I avoid being in crowded places			
I Wash my hands thoroughly after shaking hands with an infected person with swine flu			
I do not deal with a person infected with swine flu			
I Will Inform the authorities in case of doubt in the case of suspected swine flu			
I share with counselors and health educators in seminars on swine flu			
Are you take swine flu vaccination			

Fifth: what the source of your information

Where did you get more information about the swine flu

Answer more sources for your information (and only one)

TV, Radio and internet	
Ministry of Health	
Family and community	

Thank you for your participation

Annexes (8) Panel of experts

	Name of experts	Place of work
1.	Dr. Yehia Abed	AlQuds University
2.	Dr. Yousef Abu Safieh	AlQuds University
3.	Dr. Nidal Ghounim	Preventive medicine director (Rafah governorate)
4.	Dr. Yousef Awwad	Deputy of Palestine College of Nursing
5.	Dr. Khalil Shuaib	Dean of Palestine College of Nursing
6.	Mr. Abed Elraheem Shagora	European Gaza hospital (in service education manger)
7.	Mr. Ibraheem Mansour	Nursing director

Annexes (9) School of Public Health Letter.

Al-Quds University
Jerusalem
School of Public Health

جـامـعـة الـقـدس
القدس
كلية الصحة العامة

2010/7/11

الأخ/د. ناصر أبو شعبان المحترم
مدير عام تنمية القوى البشرية–وزارة الصحة
تحية طيبة وبعد،،،

الموضوع: مساعدة الطالب يوسف فتحي فحجان

يقوم الطالب المذكور أعلاه بإجراء بحث بعنوان:

"Knowledge, Attitudes and Practices Regarding H1N1 (swine flue) among Health Care Providers in Primary Health Center"

كمتطلب للحصول على درجة الماجستير في الصحة العامة- مسار صحة بيئة و عليه نرجو التكرم للإيعاز لمن ترونه مناسب لتسهيل مهمة الطالب في جمع البيانات اللازمة من مراكز الرعاية الأولية التابعة لوزارة الصحة.
علماً بأن المعلومات ستكون متوفرة لدى الباحث و الجامعة فقط.

و اقبلوا فائق التحية و الاحترام،،،

د. بسام أبو حمد
منسق عام برامج الصحة العامة

نسخة:
- الملف

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Annexes (10) Helsinki Committee approval.

18

Palestinian National Authority
Ministry of Health
Helsinki Committee

السلطة الوطنية الفلسطينية
وزارة الصحة
لجنة هلسنكي

التاريخ7/6/2010

Name:

الاسم: يوسف فتحي فحجان

I would like to inform you that the committee has discussed your application about:

نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم حول:-

Knowledge, attitudes and practices regarding H1N1 (swine flue) among health care providers in primary health center.

In its meeting on June 2010

و ذلك في جلستها المنعقدة لشهر 6 2010

and decided the Following:-

و قد قررت ما يلي:-

To approve the above mention research study.

الموافقة على البحث المذكور عاليه.

Signature
توقيع

Member
عضو

Member
عضو

Chairperson

Conditions:-

- Valid for 2 years from the date of approval to start.
- It is necessary to notify the committee in any change in the admitted study protocol.
- The committee appreciate receiving one copy of your final research when it is completed.

Annexes (11) MOH approval.

The Palestinian National Authority Ministry of Health Directorate General of Human Resources Development		السلطة الوطنية الفلسطينية وزارة الصحة الإدارة العامة لتنمية القوى البشرية

التاريخ: 2010/07/22

الرقم: 1124/ ص

الأخ الدكتور/ فؤاد العيسوي المحترم،،،

مدير عام الرعاية الأولية

تحية طيبة وبعد،،،

<u>الموضوع/ إجراء بحث</u>

بخصوص الموضوع أعلاه، يرجي تسهيل مهمة الحكيم/ يسرى فتحي فحجان والذي يعمل مشرف تمريض بمستشفى أبو يوسف النجار والملتحق ببرنامج ماجستير صحة عامة – مسار إدارة صحية لإجراء بحث التخرج بعنوان:

<u>" Knowledge ,Attitudes and Practices Regarding H1N1(Swine flue)Among Health Care Providers in Primary Health Centers"</u>

حيث ستقوم الباحث بتعبئة استبانه من مقدمي الخدمة الصحية في مراكز الرعاية الأولية (أطباء، تمريض، فنيين) وذلك بما لا يتعارض مع مصلحة العمل وضمن ضوابط أخلاقيات البحث العلمي، دون تحمل الوزارة أي أعباء، مع أخذ موافقة خطية من المشاركين بالبحث قبل إجراءه.

وتفضلوا بقبول خالص الاحترام والتقدير،،،،،،

د. ناصر رأفت أبو شعبان

مدير عام تنمية القوى البشرية

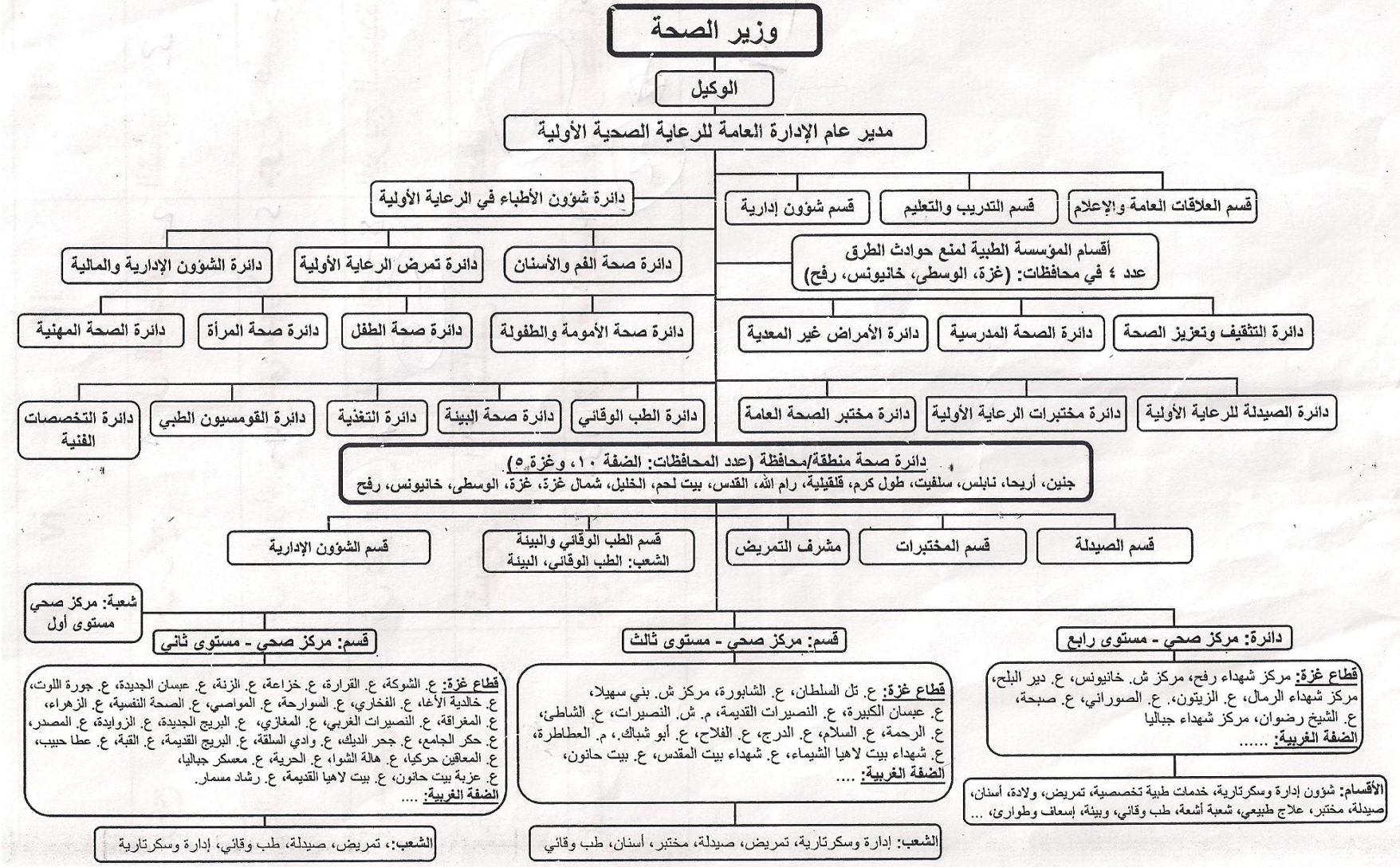
صورة لـ/

- الملف

Gaza Tel / 08-2827298 Fax / 08-2868109 Email / gdhrd@moh.gov.ps

Annexes (12) PHC Hierarchy .

١٢. ١: الإدارة العامة للرعاية الأولية: (دائرة صحة منطقة/محافظة (عدد المحافظات: الضفة ١٠، وغزة ٥)



Annexes (13) MOH Protocol Against Swine flu

Palestinian National Authority
Ministry Of Health
Hospitals General Administration

السلطة الفلسطينية
وزارة الصحة
الإدارة العامة للمستشفيات

م : ام

التاريخ : 2009/5/17

خطة الإدارة العامة للمستشفيات

مكافحة مرض أنفلونزا الخنازير في فلسطين

تاريخ الإعداد 2009/05/17

تعريف طبي بالحالات للعمل به في المستشفيات:

الحالات المشتبه فيها:

يتم التعامل مع الحالات على أنها مشتبه فيها الإصابة عند توفر الشروط التالية :

1. أي شخص يشكو من التهاب حاد في الجهاز التنفسي وكان هناك اختلاط مباشر مع حالات تم تشخيصها بأنها حالات مثبتة بوجود المرض فيها ، أو.
2. أي شخص يشكو من التهاب حاد في الجهاز التنفسي وكان تاريخه المرضي يدل على وجود اختلاط مع حيوانات مثبت وجود المرض فيها أو متوقع ، أو
3. أي شخص يشكو من التهاب حاد في الجهاز التنفسي وكان قد حضر من مناطق بها حالات مثبتة من المرض خلال 7 أيام من قدومه.

الحالات المحتملة :

أي حالة مشتبه بوجود المرض فيها بالإضافة إلى فحص مخبري موجب بوجود فيروس الأنفلونزا A ، أو

* الحالة المثبتة :

أي حالة محتملة ومثبتة بالتحاليل المخبرية بوجود الفيروس وتم تحديد نوعه بأنه H1N1 عن طريق أحد التحاليل التالية:

1. إيجابية المزرعة لفيروس الأنفلونزا
2. إيجابية الـ(PCR) للأنفلونزا
3. إيجابية الـ(IFA) لمضادات الأنفلونزا
4. ارتفاع بمقدار أربعة أضعاف للمضادات النوعية للأنفلونزا

نقل المريض للمستشفيات المعتمدة كمراكز عزل:

1. عند تشخيص حالات مشتبه بها من مرض أنفلونزا الخنازير لدى أي من مقدمي الخدمات الصحية يتم التأكد من ملائمة التشخيص مع التعريف الطبي للمرض من خلال الطبيب المعالج ورئيس أو مدير المؤسسة (كما جاء أعلاه) .
2. عند اتفاق الطبيب المعالج ورئيس أو مدير المؤسسة على مطابقة التشخيص مع التعريف الطبي للمرض يتم الاتصال بقسم الوبائيات في المحافظة ذات العلاقة (مرفق طيه عناوين وهواتف الأقسام).

الفندقية و الزيارات:

لا توجد توصيات بهذا الخصوص

ج الدوائي المتخصص:

- دواعي الاستخدام:

1. يتم استخدام دواء Oseltamivir (Tamiflu) في حالة حدوث إصابات مؤكدة بأنفلونزا الخنازير من نوع (H_1N_1) :
2. ينصح بإعطاء العلاج (Oseltamivir) لأي مصاب تثبت إصابته مخبريا بمرض أنفلونزا الخنازير أو يشكو من أعراض أنفلونزا بعد تعرضه لخنازير مصابة أو تعرضه لشخص ثبت إصابته بأنفلونزا الخنازير أو تعرضه للفيروس خلال تعامله مع عينات مخبرية ملوثة .

- بدء العلاج:

ينصح بالبدء بالعلاج خلال 36 ساعة من بداية الأعراض و لمدة خمسة أو سبعة أيام

- الجرعة العلاجية

البالغين : 75 ملجرام بالفم مرتين يوميا .

- الأطفال (أقل من 15 كيلوجرام وزنا) : 30 ملجرام بالفم مرتين يوميا .
- الأطفال (15 – 30 كيلوجرام وزنا) : 45 ملجرام بالفم مرتين يوميا .
- الأطفال (23 – 40 كيلوجرام وزنا) : 60 ملجرام بالفم مرتين يوميا .
- الأطفال (أكثر من 40 كيلو جرام وزنا) : 75 ملجرام بالفم مرتين يوميا .

- الجرعة عند استخدام الدواء كعلاج وقائي:

دواعي الاستخدام:

- الأشخاص المخالطين لحالات بشرية ثبت مخبريا إصابتها بأنفلونزا الخنازير .
- العاملين الصحيين الذين يتعاملون مع الحالات البشرية المثبتة و فنيي المختبرات فور ظهور أعراض أنفلونزا عليهم .

الجرعة

- يوصى بإعطاء الدواء كوقاية لمدة خمسة أيام بجرعة مقدارها 75 ملجرام/كيلوجرام مرة واحدة يوميا للكبار ، و بجرعة مقدارها 15 ملجرام /كيلو جرام للأطفال .

مكافحة العدوى داخل المستشفيات :

أولاً: الاحتياطات الاحترازية المعيارية :

و تهدف إلى حماية المرضى و العاملين بالمستشفى و الزائرين و تتمثل بالاحتياطات التالية :

- غسل الأيدي بالماء و الصابون .
- استخدام الكحول 70% للتنظيف في حالة عدم وجود الماء و الصابون .
- تجنب الاقتراب من الشخص المصاب بالمرض .
- وضع الكمامات الخاصة (N95) للطاقم الطبية عند التعامل مع الحالات المرضية .
- ضرورة تغطية الفم و الأنف بالمناديل الورقية عند السعال أو العطس .

يجب لمس العين أو الأنف في حالة تلوث اليدين منعا لانتشار الجراثيم .

إذا كنت تعاني أنت أو أحد أفراد أسرتك من أعراض تشبه أعراض الأنفلونزا أبلغ الطبيب المعالج بأنك مخالط لخنازير أو لمرضى مؤكدي الإصابة ، فقد تكون مريض بأنفلونزا الخنازير .

- يجب تشخيص الإصابة سريعا بأخذ عينة من الأنف أو الحلق لتحديد ما إذا كنت مصابا بفيروس أنفلونزا الخنازير .
- استعمال الملابس الواقية (PPE) عند التعامل مع العينات المخبرية و الإفرازات الأخرى (و تشمل الكفوف ، الكمامة علية الحماية N95 أو الجراحية ، مريول ذو أكمام طويلة ، غطاء الرأس و نظارة للعين) .
- الحرص الشديد عند التعامل مع أدوات و مهمات المريض .
- الوقاية من وخزات الإبر و الأدوات الجراحية الملوثة .
- نظافة البيئة المحيطة و التخلص الآمن من الفضلات .

*** ثانياً:الاحتياطات الاحترازية الإضافية المتعلقة بانتقال العدوى :**

هذه الاحتياطات تنفذ بعد التأكد من أن الإجراءات السابقة قد طبقت و تشمل التالي :

- احتياطات تجاه انتقال العدوى بواسطة الرذاذ التنفسي .
- احتياطات الاحتكاك المباشر .
- احتياطات تجاه العدوى الهوائية و تشمل استعمال الكمامة عالية الجودة (N95) و وضع المريض في غرفة سالبة الضغط إن أمكن .

ثالثاً: الاحتياطات التي يجب اتخاذها عندما يكون المريض معدي (ناقل للمرض) :

- الأفراد في عمر أكبر من 12 سنة : تستمر هذه الاحتياطات من بداية ظهور الأعراض و حتى سبعة أيام بعد اختفاء الحمى.
- الأطفال في عمر 12 سنة أو أقل : تستمر هذه الاحتياطات من بداية ظهور الأعراض و حتى عشرة أيام بعد اختفاء الحمى.
- تنصح الأسرة بإجراء احتياطات السلامة الشخصية المتمثلة في غسل الأيدي جيدا و استعمال الكمامة العادية أو الجراحية للأطفال الذين ما زالوا يعانون من السعال .

رابعاً: الاحتياطات التي تقلل من فرص انتشار العدوى :

- عزل المريض في غرفة لوحدة و في حالة عدم إمكانية ذلك يوضع المرضى من نفس المرض في غرفة كبيرة مع وضع فواصل بين كل سرير و آخر بحد أدنى متر واحد على الأقل .
- العمل على التهوية المناسبة للغرف و التي تعمل على تقليل انتشار العدوى .
- التأكد من اتخاذ كافة الاحتياطات اللازمة للحماية الشخصية (الملابس الواقية) عند الدخول في غرفة المريض .
- الحد من تحركات المريض داخل المستشفى و عند الضرورة أن يلبس الملابس الواقية .
- يجب على الكوادر الصحية التي تتعامل مع المريض اتخاذ كافة إجراءات السلامة الشخصية (لبس الملابس الواقية) .

الفئات التي يجب عليها ارتداء الكمامات الواقية من نوع (N95) :

العاملين في الخدمات الصحية الذين يتعاملون مباشرة مع المريض (أطباء ، تمريض ، العاملين بالأشعة ، معالجين طبيعيين ، ....) .

الكوادر المساعدة (عمال نظافة ، عمال مغسلة ، .....) .

- العاملين في المختبر و الذين يتعاملون مع عينات المريض .
- أسرة المريض و زائريه .

الإجراءات الواجب إتباعها عند الخروج من غرفة العزل المخصصة للمريض :

- نزع المريول أولا و وضعه في المكان المخصص لذلك .
- نزع الكفوف .
- غسل الأيدي جيدا بمحلول مطهر .
- نزع الكمامة مع الحرص على عدم لمس مقدمتها .
- غسل الأيدي مرة أخرى بمحلول مطهر .
- مغادرة غرفة الملابس .
- غسل الأيدي مرة أخيرة خارج غرفة الملابس .

المطهرات المستعملة :

يفقد الفيروس نشاطه باستعمال المواد التالية :

- الكحول بتركيز 70% : لتطهير الأواني المعدنية و أسطح الطاولات.
- الكلور (صوديوم هايبوكلوريت بتركيز 1%) : لتطهير المواد الملوثة بدم و إفرازات المريض و كذلك دورات المياه و الحمامات.

التثقيف وتوعية الكوادر الصحية العاملة بالمستشفيات

- رفع مستوى الوعي الصحي لدى جميع الكوادر الصحية العاملة بالمستشفيات بهدف التبليغ عن أي حالات مشتبه وكيفية الوقاية من الإصابة بعدوى المرض .
- تدريب العاملين بالمستشفيات على التعاطي مع مثل هذه الحالات واستخدام أدوات الحماية الشخصية .
- المشاركة في توعية المواطنين عن المرض وكيفية الوقاية منه.

استبيان مخالط لمرض أنفلونزا الخنازير

الاسم
رقم الهاتف
تاريخ الميلاد
العنوان
المهنة
هل أخذ تطعيم الأنفلونزا (نعم/ لا)
اسم العيادة التابع لها
تاريخ آخر تعرض
البعد عن مزرعة مصابة
تفاصيل التعرض
الوضع الصحي الحالي : (جيد/ غير جيد)
تاريخ ظهور الأعراض الإكلينيكية

الهوية
الجنس
مكان العمل
في حالة نعم ، تاريخ التطعيم
الطبيب المعالج
مكان التعرض

الأعراض:

- حرارة (نعم/لا)
- سعال (نعم/لا)
- آلام في الصدر (نعم/لا)

تاريخ بداية الحرارة
ضيق تنفس

أعراض أخرى: ضعف عام (نعم/لا)
قئ (نعم/لا)
التهاب العينين (نعم/لا)
قشعريرة (نعم/لا)
آلام في العضلات (نعم/لا)

رشح (نعم/لا)
صداع (نعم/لا)
إسهال (نعم/لا)
آلام في الحلق (نعم/لا)

اسم معبئ الاستبيان

التاريخ

نموذج تقصي لحالة (مشتبه/ محتملة / مؤكدة) من مرض أنفلونزا الخنازير

الاسم رباعي:.....

رقم الهوية :..... تاريخ الميلاد:.....

الجنس :..... رقم الهاتف :.....

العنوان :.....

المهنة :..... مكان العمل:.....

معلومات عن المريض :

تاريخ بداية الأعراض:..... الجهة المبلغة :.....

تاريخ التبليغ:.....

هل تتماشى الأعراض والسيرة لمرضية مع التعريف العلمي للحالة (مشتبه/محتملة/ مؤكدة)؟ (نعم /لا)

الأعراض الموجودة : حرارة (نعم/لا) آلام في الحلق (نعم/لا)

صعوبة في التنفس: (نعم/لا) سعال (نعم/لا)

أعراض أخرى حدد:.....

اسم المستشفى المحول لها الحالة ..... تاريخ دخول المستشفى .....

هل تمت المخالطة مع خنازير نافقة أو مريضة – حالة مرضية مؤكدة– عينات لحالة مؤكدة)
خلال 10 أيام من تاريخ ظهور الأعراض؟ (نعم/لا) إذا كانت الإجابة بنعم حدد:.....

الفحوصات المخبرية :

تاريخ ظهور الأعراض	سلبي	إيجابي	نوع الفحص
			Rapid Test

المعرفة والمواقف والممارسات المتعلقة بفيروس H1N1 (أنفلونزا الخنازير) بين مقدمي الرعاية الصحية في مراكز الرعاية الصحية الأولية

إعداد: يوسف فتحي فحجان

إشراف: الدكتور/ يوسف أبو صفية

الملخص:

الهدف من الدارسة هو تقييم المعرفة والمواقف والممارسات اتجاه أنفلونزا الخنازير بين مقدمي الرعاية الصحية في مراكز الرعاية الأولية في قطاع غزة ،ومعرفة العوامل المحتملة مثل العمر والجنس ونوع المهنة وسنوات الخبرة ومصدر المعلومات حول المرض، بالإضافة إلى دراسة العلاقة بين المعرفة والمواقف والممارسات اتجاه أنفلونزا الخنازير.

الطريقة: استخدم الباحث الطريقة الوصفية التحليلية، وتم جمع البيانات باستخدام استبيان تم إعداده باللغة العربية وعرض على ذوي الخبرة بمجالي الصحة البيئية والصحة العامة وكان يتألف من خمسة أجزاء، الجزء الأول من الاستبيان معلومات شخصية، الجزء الثاني من الاستبيان يشمل مقياس المعرفة عن أنفلونزا الخنازير ويتكون من 14 سؤال ، الجزء الثالث من الاستبيان يشمل مقياس المواقف ويتكون من 11 سؤال ، الجزء الرابع من الاستبيان يشمل مقياس الممارسات اتجاه أنفلونزا الخنازير و يتكون من 9 أسئلة ، الجزء الخامس من الاستبيان يشمل مسألة عن مصدر المعلومات عن المرض . وقد تم تحليل البيانات باستخدام برنامج SPSS ،وذلك باستخدام اختبار(T-test) و (ANOVA) و كانت عينة الدراسة تتكون من 300 مشارك وكان معدل الاستجابة 93.3% وتم احتساب عدد المشاركين في كل عيادة نسبيا وفقا لعدد مقدمي خدمات الرعاية الصحية في كل مركز صحي.

النتائج: تشير الدراسة بأن مستوى المعرفة لدى مقدمي الرعاية الصحية نسبته مرتفعة وفقا لبنود المعرفة ويشكل حوالي 92% ولكن مواقف المشاركين اتجاه المرض كانت أقل من معرفتهم فهي حوالي 65.8% ولكن على مستوى الممارسة كانت الأدنى وهي حوالي (60.9%) . وتشير الدراسة بأن هناك دلالة إحصائية بين المعرفة ونوع المهنة والفرق كان إيجابياً تجاه التمريض والأطباء، حيث مستوى معرفتهم بالمرض كانت الأعلى بين المهن الأخرى ، وهناك دلالة إحصائية بين الممارسة والمعرفة ومركز الرعاية الصحية الأولية ، والفرق كان إيجابيا لمحافظة المنطقة الوسطى ، حيث مستوى المعرفة هي الأعلى بين المحافظات . وأشار 50.5%من المشاركين بأن الإذاعة والتلفزيون والإنترنت كانت المصدر الرئيسي للمعلومات حول أنفلونزا الخنازير، وتلا ذلك وزارة الصحة بنسبة 45.2% ، اما المجتمع والعائلة كان بنسبة 3.9% . ولوحظ أن 31.4% فقط من مقدمي الرعاية الصحية قد أخذوا التطعيم الخاص بأنفلونزا الخنازير، وأن 32.6% من مقدمي الرعاية الصحية يعتقدون بأن تطعيم أنفلونزا الخنازير يسبب العديد من المشاكل . وتشير الدراسة بأن 52.1% من مقدمي الرعاية الصحة لهم دراية ببروتوكولات وخطة وزارة الصحة لمواجهة هذا المرض . وتوضح الدراسة بأن هناك ارتباط قوي من الناحية الإحصائية بين مستوى الاتجاه والممارسة ولا علاقة بين المعرفة والممارسة و لا يوجد أي فروق بين المعرفة والاتجاهات و الممارسة تجاه أنفلونزا الخنازير تبعا لنوع المهنة أو الخبرة الاجتماعية أو المتغيرات الديموغرافية أو مستوى مركز الرعاية الصحية الأولية.

ويوصى الباحث بأنه ينبغي أن تقوم وزارة الصحة بدور أكبر في الإشراف والمتابعة في تطبيق البروتوكولات وخصوصا عند حدوث وبائيات وأن تقوم بدراسة العوامل الهامة واستراتيجيات الطرق السليمة للوقاية من الأمراض الناشئة الأخرى والسيطرة عليها في المستقبل.