Deanship of Graduate Studies

Al- Quds University

Prevalence of Skin Diseases among Primary Schoolchildren in Gaza Strip

Prepared By:

Rafat Ramadan Naim

M.Sc. Thesis

Jerusalem- Palestine

1427 / 2006

Prevalence of Skin Diseases among Primary Schoolchildren in Gaza Strip

Prepared By:
Rafat Ramadan Naim

B.Sc.: Biochemistry – The University of Constantin – Algiers

Supervisor:
Dr. Yehia Abed, Ph.D.

Associate Professor- Al-Quds University

A thesis Submitted in Partial fulfillment of requirements for the Degree of Master of Public Health
Al- Quds University

April 2006

Al Quds University
Deanship of Graduate Studies
Program / Department

Thesis Approval

Prevalence of Skin Diseases among Primary Schoolchildren in Gaza Strip

Prepared By : **Rafat Ramadan Naim**

Registration No**: 2312194**

Supervisor : **Dr. Yehia Abed**

Master thesis submitted and accepted, Date: ……

The names and signatures of the examining committee members are as follows:

1-Head of Committee: **Dr. Yehia Abed** Signature ……

2-Internal Examiner: **Dr. Susane shushaa**. Signature ……....

3-External Examiner: **Dr. yousef Al-Jeesh** Signature ….……..

Jerusalem- Palestine

1427 / 2006

Dedication

"I would like to dedicate this work to my family; Father, wife, sons, daughters, brothers and sisters, whose, without their support, this work would not have been possible"

Rafat Ramadan Naim

Declaration

I Certify that this thesis submitted for the degree of Master 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 ……..

Rafat Ramadan Naim

Acknowledgement

This thesis has been made possible by many supporting and generous people and I would particularly like to thank:

First of all, I express my gratitude to all the children and their parents for their participation in the study.

Dr. Yehia Abed my supervisor, who inspired me to start my research, taught me scientific methodology and guided me through this work, thanks to his great knowledge; experience, creative, enthusiastic and rigorous scientific supervision, In addition his encouragement made this thesis possible.

My thanks are to **Dr. Susane shushaa,** the assistant dean of the school of public health and for all the staff in Gaza and Jerusalem**.**

My brother **Dr. Magdy Naim** (the brilliant dermatologist) for his help and support during all stages of this work. He was always available when necessary.

Dr. Abdalla Abed Al- Menim, the vice-Minister of Ministry of Education and Higher education, for his agreement to conduct this study through the governmental schools.

All those who provided helpful suggestion and useful recommendation during the preparation of questionnaire in this study. Specially **Dr yousef Al-Jeesh** Dean of the Faculty of nursing at Islamic University, **Dr. Samir Zyara** director of school health department (MOH) , **Mr. Naim Ebid** and all staff of school health.

The schools staff for all their help. Thanks to headmasters who helped with the distribution of Questionnaires to the children and managed to get them back, and all the teachers who generously took their time to help us.

I wish my study would contribute in helping my people in Palestine, whom are in need for all the efforts offered.

Abstract

Skin disease is a common problem; it is always assumed that the prevalence of skin diseases in developing countries is very high, and that infestations and skin infections are endemic. The school environment makes children vulnerable to cross transmission of communicable skin diseases among themselves and their families. Among schoolchildren, it considered a nuisance causing much morbidity and disability, virtually a little is known about the prevalence of skin conditions among general population and especially among children in Gaza Strip.

Objectives: To determine the prevalence of skin conditions and associated demographic socioeconomic and environmental factors in primary school children in Gaza strip**.**

Methods: A cross-sectional study was carried out on a multistage stratified random sample of schoolchildren in Gaza and North Gaza Governorates. A questionnaire for assessing factors associated with the prevalence of skin diseases was completed, and a complete physical examination was carried out on 359 students. The study included 161 (45%) males and 198 (55%) females from first and six grades.

Results: This study showed that skin conditions are very common in children and half of them (48.5%) are affected. The prevalence of skin diseases is higher among males (55.9%) than females (42.8%), the differences between males and females are statistically significant. Pityriasis alba and pediculosis lices had the highest prevalence rates of all skin disorders (23.5%, 9.5% respectively). Males had a higher frequency of pityriasis alba (34.8%) than did females (13.6%), But females had a higher frequently of head lices (16.2%) than did males (1.2%). There is a strong significant differences in presence of Pityriasis alba and pediculosis lices among males and females Other diagnoses were eczematous diseases 4.2% followed by infectious diseases (3.6%) and scabies (0.8 %). Others diseases includes pigmentary patches, insect bites, drug eruptions, vitiligo, cheilosis, spares hair were 7.2%.

The current study has revealed that the top five skin disorders on the list are: pityriasis alba, Pediculosis Lices, Eczematous Diseases, Infectious Diseases and Scabies. They

comprised 85.1% of the skin conditions encountered, Pityriasis Alba causes accounted for 47.7% of all cases, and Pediculosis Lices causes accounted for 19.6%. The study revealed that more than 85% of the disorders can be grouped into fewer than six categories, these finding are important in designing training programs for medical teams involved in the delivery of primary health care services in developing countries such Palestine , where about half of the population is less than 15 years of age.

The study showed that the demographics, socio-economic variables including the sex, age, place of living, and education level of mothers showed a great impact in having skin diseases, while prevalence of skin diseases are not affected by some socioeconomic factors such as fathers years of education, family income and family size.

Further, the findings pointed to the differences of some hygiene practice variables and having skin diseases. The results showed that the children who share combs, towels, beds, covers, clothes, and socks with others are more likely to be affected by skin diseases than who do not share.

Conclusion and recommendations: The study concluded that the prevalence of skin diseases among schoolchildren in Gaza strip was very high. Therefore, we recommended the introduction of a preventative health education program among schoolchildren at different levels, their families, and teachers on skin diseases.

ملخص الدراسة

تعتبر الأمراض الجلدية من الأمراض الشائعة في الدول النامية ، و لا يعرف الكثير حول معدل انتشار هذه الأمراض بين السكان بشكل عام وبين الأطفال بشكل خاص في قطاع غزة، وقد تكون هذه الدراسة هي الأولى من نوعها في قطاع غزة بحيث تشكل الأساس لدراسات مستقبلية في هذا المجال.

أهداف الدراسة: تقدير معدل انتشار الأمراض الجلدية ومدى تأثرها بالعوامل الديمغرافية والاقتصادية الاجتماعية في المدارس الابتدائية في قطاع غزة .

منهجية الدراسة: استخدمت الدراسة المقطعية لتحقيق أهداف الدراسة، وقد تم أخذ العينة على عدة مراحل، وبطريقة عشوائية تم اختيار 380 طالباً من المرحلة الابتدائية من الصف الأول والسادس، استجاب منهم للدراسة 359 طالباً، 161 ولداً (45%) و 198 بنتاً (55%) . تم استخدام قائمة اختيار تحتوي على معلومات شخصية وطبية عن كل طفل في الدراسة تعبأ من قبل المختص بالأمراض الجلدية، وأداة إستبانة تحتوي على معلومات شخصية واجتماعية اقتصادية.

النتائج: أظهرت الدراسة انتشاراً كبيراً للأمراض الجلدية بين أطفال المدارس، وأظهرت النتائج إصابة ما يقارب نصف الأطفال(48.5%) ، حيث كانت الإصابة بين الذكور(55.9%) أكثر منها في الإناث(42.8%)، وكانت الاختلافات بين الذكور والإناث ذات دلالة إحصائية. داء النخالية البيضاء وداء القمل كانا هما الأكثر انتشاراً (23.5% و 9.5% تباعاً)، حيث كان الذكور هم الأكثر إصابة لداء النخالية البيضاء(pityriasis alba) (34.8%) من الإناث (13.6%)، و في المقابل كانت إصابة الإناث بداء القمل (16.2%) أكثر من الذكور(1.2%)، وكان تأثير الجنس عل الإصابة بكل من داء النخالية البيضاء وداء القمل ذو دلالة إحصائية. وأظهرت الدراسة وجود بعض الأمراض

الجلدية الأخرى مثل أمراض الحساسية (Eczematous diseases) 4.2% ، الأمراض الجلدية المعدية (3.6%)، الجرب (0.8%) . وكانت هناك إصابات لبعض الأمراض الأخرى ولكن بدرجة أقل مثل البقع الصبغية، لسع الحشرات، الأمراض الناتجة عن تأثير الأدوية، البهاق وفقدان الشعر.

وخلصت نتائج الدراسة بأن بعض العوامل الاقتصادية و الاجتماعية والديمغرافية لها تأثير واضح على معدل الاصابة بالأمراض الجلدية مثل الجنس ، العمر، مكان السكن والمستوى العلمي للأم. وبالمقابل هناك عوامل أخرى مثل الدخل، المستوى التعليمي للأب وحجم العائلة لم يكن لها أي تأثير يذكر.

أظهرت الدراسة تأثير بعض عوامل الممارسة الصحية مثل عدم مشاركة الآخرين في الأمشاط، الفراش، الأغطية، المناشف، الجوارب والملابس في تجنب الإصابة بالأمراض الجلدية.

الاستنتاجات: دلت النتائج على انتشار كبير للأمراض الجلدية بين أطفال المدارس الابتدائية في قطاع غزة، وعلى هذا فقد أوصت الدراسة بعمل برنامج تعليمي للأطفال والآباء والمدرسين حول سبل الوقاية من الأمراض الجلدية طرق العدوى وعلاجها.

Table of Contents

Chapter 1
Introduction

Chapter 2

Review of Literature

Chapter 3

Conceptual Framework

Chapter 4

Methodology

Chapter 5

Results and discussion

Chapter 6

Conclusion & recommendations

List of Tables

List of Figures

List of abbreviations

AD	Atopic dermatitis
GDP	The Gross Domestic production
GNP	The Gross National product
MOE	Ministry of Education and Higher Education
MOF	Palestinian Ministry of Finance
MOH	Ministry of Health
MOP	Ministry of Planning
OPT	Occupied Palestinian Territories
PA	Palestinian Authority
PCBS	Palestinian Central Bureau of Statistics
PHC	Primary Health Care
SPSS	Statistical Package for Social Science
UN	United Nations
UNICEF	United Nations International Children's Emergency Fund
UNRWA	United Nations Relief and Works Agency for Palestinian Refugees in the Near East
UNSCO	Office of the United Nations Special Coordinator in the Occupied Territories
WB-GS	West Bank and Gaza Strip
WFP	World Food Programme
WHO	World Health Organisation

List of Annexes

Definitions

Skin disease

Skin disease is any of the diseases or disorders that affect the human skin. They have a wide range of causes (Encyclopedia Britannica, 2005)

Classification of skin diseases

Skin diseases were classified according to the modified 10th revision of the international classification of disease (ICD-10) (Karen, 1998).

Physical examination

In medicine, the **physical examination** or **clinical examination** is the process by which the physician investigates the body of a patient for signs of disease. It generally follows the taking of the medical history — an account of the symptoms as experienced by the patient. Together with the medical history, the physical examination aids in determining the correct diagnosis and devising the treatment plan. This data then becomes part of the medical record (Wikipedia, 2005).

Infestations:

An infestation is the presence of a large number of pest organisms in an area or field, on the surface of a host or anything that might contact a host, or in the soil. In addition, it is a parasitic attack or subsistence on the skin and its appendages, as by insects, mites or ticks (Wikipedia, 2005).

Hygiene

Hygiene is the maintenance of healthy practices. In modern terminology, this is usually regarded as a particular reference to cleanliness. Outward signs of good hygiene include the absence of visible dirt (including dust and stains on clothing) or of bad smells. hygiene has come to mean any practice leading to the absence of harmful levels of bacteria (Wikipedia, 2005).

Sanitation

Sanitation is a term for the hygienic disposal or recycling of waste materials, particularly human excrement. Sanitation is an important public health measure which is essential for the prevention of disease. Sanitation is the effective use of measures which will create and maintain healthful environmental conditions. Among these measures are the safeguarding of food and water and the control of disease-carrying insects and animals (The American Heritage Stedman's Medical Dictionary, 2002).

Risk Factors

A **risk factor** is a variable associated with an increased risk of disease or infection but risk factors are not necessarily causal. For example, being young cannot be said to cause measles, but young people are more at risk as they are less likely to have developed immunity during a previous epidemic (Gale Encyclopedia of Cancer, 2002).

CHAPTER I

INTRODUCTION

Skin diseases in developing countries have a serious impact on people's quality of life, causing lost productivity at work and school, and discrimination due to disfigurement. Skin disorders are generally considered to be a nuisance, especially among schoolchildren. Though rarely lethal, they can cause much misery and disability. Skin changes may also indicate the presence of more serious diseases that need treatment, such conditions are ignored or given low priority by health authorities because they did not, on the whole, kill people, and they often did not present in tertiary care centers. However, it seems unwise to ignore a health problem for which such a demand of the populations is expressed.

Skin diseases occur all over the world in significant levels. They have been identified as a public health problem in developing countries. The importance of this problem has been established through several kinds of studies, studies from specialized dermatology centers, where the main reasons for consulting were common infectious skin diseases; prevalence studies in the general population pointing out very high prevalence rates for common skin diseases. Finally, studies conducted in non-specialized health centers; where those skin diseases represented about 10% of the total number of consultations (Mahé et al., 1991).

Skin diseases have been considered as having a very low priority level, due to their low lethality rate, and therefore have been ignored by health authorities. It is always assumed by some dermatologist that the prevalence of skin diseases in Palestine is high in comparison with other developing contries, and that infestations and skin infections are highly endemic in poor rural communities; however, very few epidemiologic reports verify these assumptions.

The available studies about the skin diseases provide us with information about prevalence, age, and sex differences in affected groups, and their regional distribution. It also offers the most useful way of evaluating causes of skin diseases in human populations. As Doll Richard et al., (1987) pointed out that "epidemiology is the simplest and most direct method of studying the causes of diseases in humans and many contributions have been made by studies that have demanded nothing more than an ability to count, think logically and have an imaginative idea". Although epidemiology is often perceived as a novel addition to dermatology, The first epidemiologic discovery can be traced back to 1746, when James Lind concluded that scurvy in sailors was related to dietary factors (lain, 2003).

The most important factors accounting for distribution of skin diseases include socioeconomic status, malnutrition, overcrowding, and poor standards of hygiene. Various skin disease surveys conducted in developing countries have concluded that skin diseases are very common in children and adolescents, infections and infestations are very high (Williams, 1998). Gaza strip is one of the most crowded areas in the world.

Having population density 49.6% of its population less than 15 years of age (MOH, 2003), However, very little is known about the magnitude and burden of skin diseases among children from this part of the world. Such information and statistics can form an important basis for population-based health policies. Although studies are available giving the relative frequency of skin conditions seen in specialized pediatric dermatology clinics, the aim of this study was to analyze the prevalence and pattern of skin diseases among schoolchildren in Gaza strip.

1.1 Study Justification

Skin diseases are a public health problem in developing countries. Although most of them are not life threatening, many of them are debilitating due to functional loss, pain and itch and the social problems they cause. The condition is endemic among school children. Very few people seek medical attention when infected with skin disease as seen in medical records in the health centers. This study helps in encouraging community to seek medical attention when children are infected to avoid spreading to others.

Little information is available about the prevalence of skin conditions among children in the general population of Palestine. Low socioeconomic status, malnutrition, overcrowding, and poor standards of hygiene are important factors accounting for the distribution of skin diseases in developing countries such as Palestine. Knowledge about the distribution of skin disease within a population can be used as the basis for research as well as planning for the delivery of health services. There are currently few data about the needs in community; therefore, this study was set up to investigate skin abnormalities found in a population in Palestine.

1.2 Goal

To know the prevalence of skin diseases among school children in Gaza strip so as to form a basis for control of occurrence of the condition in the communities.

1.3 Objectives

1. To identify the most common skin diseases among schoolchildren in Gaza strip.

2. To examine the relationship between Prevalence of the skin diseases with the socio-economic, environmental and hygiene factors.

3- To examine the relationship between Prevalence of the skin diseases and the age of children.

4- To examine the relationship between Prevalence of the skin diseases and the sex of children.

1.4 Research questions

1- What is the prevalence of skin diseases among school children in Gaza strip**?**

2- What are the risk factors which influence the prevalence of skin diseases?

1.5 Background of the study

This study was conducted in Gaza Strip in Palestine, therefore in the following paragraphs; we provide some information about the geographical context, demographical characteristics of Gaza Strip, Palestinian economy, Health care system. Further, more, it is provided information about educational status, housing condition and sanitation.

1.5.1 Geographical context:

Palestine has an important geographical and strategic location; Historical Palestine is located in Western Asia, between latitudes 29, 30 and 33, 15 north and longitudes 24, 10 and 35, 40 east of Greenwich. Palestine is bordered on the west by the Mediterranean, with a coastline that is 230 kilometers (km) long. On the east by Syria, with whom it shares a border of 70 km, and Jordan, with whom it shares a border of 360 km; on the north by Lebanon (and Syria), sharing with them a border of 79 km; and on the south by the Sinai and the Gulf of Aqaba. The border from Taba, on the Gulf of Aqaba, to Rafah, on the Mediterranean, is approximately 240 km long. The Palestinian coast on the Gulf of Aqaba is 10.5 km long (The Palestinian Information Center, 2003).

Palestine has an oblong shape, measuring from north to south some 430 km. Its width varies from 51 to 70 km in the north and from 72 to 95 km in the middle. In the south, however, it becomes wider, extending to some 117 km. It then narrows again into a triangular shape, the tip of which touches on the Red Sea (The Palestinian Information Center, 2003)

The total surface area of Palestine is approximately 27,000 km^2 (10,429 square miles), out of which 704 km^2 (272 square miles) is water surface, constituting Lake Tiberias and one half of the Dead Sea

Palestinian National Authority territories comprise two areas separated geographically: West Bank and Gaza Strip lies within an area of 5,800 square kilometer west of the river Jordan. It has been under Israel Military Occupation, together with East Jerusalem since June 1967 (Annex 1).

Gaza Strip is a narrow piece of land lying on the coast of Mediterranean Sea. Its position on the crossroads from Africa to Asia made it a target for occupiers and conquerors over the centuries. Gaza Strip is very crowded place with an area of 360sq. Km^2; the population is mainly concentrated in the cities, small village and eight refugee camps that contain two thirds of the population (The Palestinian Information Center, 2003) (Annex 2).

Gaza Strip represents the southern governorates of Palestine; it is about 50 km. long and 7-12 km wide with an area of about 362 km^2. It is divided into the following five districts:

1. The northorn district (Beit-lahia, Beit- Hanoon and Jabalia)
2. Gaza district.
3. The mid-Zone district (Deir Al-Balah, Magazi, Bureij and Nuserat).
4. Khan- Younis district.

5. Rafah district.

1.5.2. The Palestinian Population:

The estimated number of Palestinians all over World by the end of 2005 is 10.1 million distributed as follows: 3.8 million in the Palestinian Territory (37.9%) of the total Palestinians all over World; 1.1 million (11.2%) live in Israel; 3.0 million (29.4%) in Jordan; on the other hand, 462 thousands Palestinians (4.6%) live in Syria. In The light of all given data its probably expected to doubling in number of Palestinian Population after 23 years (PCBS, 2006).

The population of the Palestinian Territory distributed as follows :2.4 million (63.0%) in West Bank and 1.4 million (37.0%) in Gaza Strip. According to the distribution of population by Governorates, Hebron Governorate has the highest rate of population at 13.9% of the total population, followed by Gaza Governorate 13.0%; Jerusalem Governorate comes third with 10.6%. On the other hand, Jericho and Al Aghwar Governorate has the lowest rate of population at the end of 2005 at 1.1% (PCBS, 2006).

According to the most recent estimates, 46.0% of the population in Palestine is under 15 years; 44.1% in West Bank and 49.0% in Gaza Strip. The percentage of Palestinians who are above 65 years in Palestine is 3.1%; this figure reached 3.3% in West Bank and 2.7% in Gaza Strip.

1.5.3. Palestinian Refugees:

On 29 November 1947, the United Nations (UN) General Assembly passed Resolution 181, endorsing a partition plan to divide the land of historic Palestine between the Jews and Arabs. War ensued and resulted in the state of Israel being created on 77% of the total area

of historic Palestine. Over 750,000 Palestinians were displaced and dispossessed of their homes and land, creating what has become the largest refugee population in the world. Palestinian facilities and private properties such as schools, hospitals, houses and lands confiscated by the Israeli government as "state property" since 1948 have been allocated for Jewish use only. New settlements throughout Israel and the Occupied Palestinian Territories are built on the remains of the destroyed villages and on land previously owned by Palestinians (Palestinian Refugee and Diaspora Centre, 2005).

According to Palestinian Central Bureau of Statistics (PCBS) in 2004, 42.6% of the population of Palestinian in Palestine is refugees. They are estimated with 1,541,337 individuals at the end of 2004, in the West Bank 656.961 individual with a percentage of 28.5% out of total West Bank population and 884,376 individuals in Gaza Strip a percentage of 66.1% out of the total population in Gaza Strip.

Today there are approximately 5 million Palestinian refugees throughout the world. There are about 3.5 million Palestinian refugees registered with the United Nations Relief and Works Agency (UNRWA), 33% of them live in 59 UNRWA refugee camps and 67% are scattered throughout various countries. There are approximately 1.5 million non-registered refugees scattered throughout the Arab world (Palestinian Refugee and Diaspora Centre, 2005).

1.5.4. Palestinian economy:

The Palestinian economy had witnessed a deformed economic regime, reflecting, in part, the severe impact of Israeli policies and practices. It was controlled by Israel, the occupying power, and dependent on it. The Palestinians were not able to exercise authority over economic policy and management. This affected many aspects of the

Palestinian economy such as licensing and regulation; production planning; international trade regimes; commercial finance facilities; monetary, fiscal and customs regulations; land and water use; mineral extraction; construction; public utilities; public services; among other things.

The Palestinian economy is still directly and indirectly profoundly affected by the internal and external Israeli economic policies and measures. Internally, Israel's administration of its own economy affects the Palestinian economy indirectly. This takes the form of determining the interest rate, the standards and measurements and custom duties. Furthermore, the Israeli direct restrictions on the free movement of people, products, and labor are exhausting the Palestinian economy and its ability to survive. Externally, the Israeli economic agreements with neighboring countries in particular such as those signed with Jordan, Egypt and Turkey are affecting the Palestinian economy and trade.

According to the Palestinian Ministry of Finance (MOF), The Gross National product (GNP) in Palestine has been subjected to high fluctuation during the last five years. The Gross National production (GNP) was 5.454 million US$ in 1999 and decreased to 3.720 million US$ in 2004. Gross Domestic Production (GDP) was 4.517 millions US$ in 1999 and decreased to 3.286 US$ in 2004. Gross National production per capita (GNP/capita) was 1.806 in 1999 and decreased to 979 US$ in 2004. Gross Domestic Production (GDP/ capita) was 1.496 US$ in 1999 and decreased to 856 US$ in 2004 (MOH, 2004)

1.5.5 The Palestinian education system Today:

The Palestinian education system currently includes ten years of basic schooling (four years of lower elementary school and six years of upper elementary school) and two years of secondary schooling. This periode of secondary school is either academic (with

students tracked into arts or science, depending on academic performance and the recommendation of teachers) or vocational (in commercial, agricultural, religious law, or tourism tracks, with options that allow for continuing to tertiary education or terminating studies after grade 12). For those who hope to continue to tertiary education, secondary schooling concludes with the *tawjihi* examination, the results of which largely determine students' access to the postsecondary institutions and fields of their choice. The minimum *tawjihi* score needed for tertiary education admission varies annually, and departments within tertiary institutions set their own internal standards, with sciences typically requiring higher scores than non science departments, and universities requiring higher scores than community colleges. Indigenous tertiary education options for Palestinians currently include eleven universities and five colleges. Three universities are in Gaza, and the remaining eight universities and five colleges are in the West Bank. Universities and colleges offer four year baccalaureate degrees and, at seven institutions, graduate programs. There are also twenty community colleges in the West Bank and five in Gaza. These institutions offer higher technical and vocational training that lasts for two years and leads to various diplomas(Palestinian MOE, 2005).

Palestinian schools include both single-sex and coeducational institutions, there were 802 schools for males, 786 for females and 688 coeducational of the latter in 2005-2006 (Palestinian MOE, 2005). Coeducational schools are more common at the elementary level (social preference is for separated schooling at the secondary level)

1.4.5.1. School and Education Institutions:

The main findings of the Educational Institutions Census 2004/2005 showed that there are 2.276 schools in the Palestinian Territory. These institutions are distributed by region as follows: 1.715 in the West Bank and 561 in Gaza Strip. They are distributed by

supervising authority as follows: 1725 governmental schools, 279 UNRWA schools, 272 private schools. The number of governmental schools in Gaza Strip (346), and 1379 in the West Bank (MOE, 2005).

1.5.5.2. Students (Pupils):

There are 107.8488 students (pupils) attending schools, of these 637.613 are in the West Bank and 440.875 in Gaza Strip. These students (pupils) are distributed by gender as follows: 536752 males and 541736 females (MoE, 2005).

1.5.5.3. Classes:

The results showed that there are 31001 classes at schools. The classes are distributed by region as follows: 20390 are in the West Bank and 10,611 are in Gaza Strip. Classroom density ranges from a high of 43.4 students per classroom in UNRWA schools, to 34.7 in government schools (31.9 in West Bank and 41.2 Gaza Strip), to a relative low of 24.4 in private schools (PCBS, 2004)

1.5.5.4. Teachers:

The findings showed that there 48.674 teachers in schools, they are distributed by region as follows: 32,187 are in the West Bank and 16,487 are in Gaza Strip. They are distributed by supervising authorities as follows: 35,013 are in governmental schools, 8,477 are in UNRWA schools, 3,536 are in private schools ,

1.5.5.5. General Indicators:

The average number of students per teacher in schools varies according to supervising authority. 26,8 in the governmental schools, 13 in the governmental kindergartens, 34.4 in

the UNRWA school, 16.9 in private schools and 26.6 child per teacher in private kindergartens (MOE, 2005) .

About the average number of students per class, the findings showed that it varies from supervising authority to another. It reached 34.7 in governmental schools (31.9 in West Bank and41.2 Gaza Strip), 17.3 in governmental kindergartens, 43.4 in UNRWA schools, 24.4 in private schools and 25.5 child per class in private kindergartens (MOE, 2005).

1.5.6. The Health Care System:

Ministry of Health (MOH) is the main health provider in Palestine beside others health providers, UNRWA, Medical Services for Police and general Security (MSP), health services belonging to national and international Non Governmental Organizations (NGOs). Private for profit service providers (primarily involved in diagnostic services and individual or group specialized care) account for relatively small proportion of services delivered. However, many physicians and nurses who are working in more than one setting, including public and private clinics or NGO.

The MOH is the health authority responsible of supervision, regulation, licensure and control for whole health services. Moreover, the MOH is responsible for a significant portion of both primary health care (PHC) and secondary care and some tertiary care. The MOH purchases tertiary services from other health providers, both locally and abroad.

School Health is taken seriously with efforts by the MOH, and UNRWA. Health education, medical and dental examination and registration are provided and there is a link-up with immunization programs.

The Palestinian school health program blends a comprehensive primary medical, mental health care, with preventative and psychosocial services, and organizes broader school-

based and community based health promotion efforts. School health program offers the services through the governmental school health program that targets the non refugee students and UNRWA school health program that targets refugee students (MOH, 2004).

1.5.6.1. Primary Health Care (PHC) in Palestine:

The total number of registered PHC centers in Palestine is 619 (103 in Gaza Strip and 516 in West Bank). Distribution by provider shows that, there are 391 centers are owned and supervised by MOH with a high percentage of 63.1%, 51 centers by UNRWA with a percentage of 8.2% and NGOs have 177 centers with a percentage of 28.6% of the total centers (MOH, 2003).

1.5.6.2. PHC Facilities by level:

In Gaza Strip, MOH owns and operates fifty four PHC centers, twenty two out of them are at level (II), 25 at level (III) and 6 at level (IV). All these centers provide first line diagnostic, treatment and prevention services including immunization. In addition to, one specialized mental health clinic in Khan Younis. These PHC centers provide a special health care services in different aspects, 32 centers provide antenatal care, 1 out of them have a delivery unit currently operated in Gaza City. Also, there are 89 specialized clinics, 16 family planning clinics, and 22 dental and oral clinics. About 28 centers have laboratories and 11 centers have x-Ray units (MOH 2003).

In West Bank: MOH owns and operates 330 PHC centers, 195 of them provide MCH services, 42 are general clinics, and 93 are work in part time as village health room with 2-3 visits of physician per week. There are 81 centers with family planning clinics, 17 centers have oral and dental clinics, 64 centers have specialized clinics and 55 centers have medical laboratories (MOH, 2003).

1.5.6.3. UNRWA PHC Centers:

UNRWA owns and operates 51 centers in Palestine, (17 centers in Gaza Strip and 34 in West Bank). UNRWA has offered health services free of charge for all refugees and plays a distinguished role in the vaccination program in cooperation with MOH, in addition to curative services, antenatal and postnatal care and other specialized services. Furthermore, all refugees in Gaza Strip and West Bank have the right of accessibility to the governmental health services (MOH, 2003).

1.5.7. The State of Nutrition: West Bank and Gaza Strip:

Since the start of the intifada in 2000, the Palestinian people have had to face increasing poverty, unemployment and hardship. This has had a serious impact on household food security with households finding it more and more difficult to access food. Food aid is seen as having been instrumental in preventing and lowering levels of malnutrition.

Refugee children were found to be statistically more stunted than non-refugee children in 2003 in both the West Bank (12.4 per cent compared to 9.4 per cent) and the Gaza Strip (13.2 per cent compared to 10.6 per cent) (Al Quds University, 2004). This is probably related to higher levels of poverty and overcrowded conditions among refugee families. Rates of stunting are higher in the Gaza Strip (11.0 per cent) compared to the West Bank (8.6 per cent) (Palestinian Central Bureau of Statistics, 2004). This is related to the higher percentage of refugees living in the Gaza Strip (65.5 per cent) compared to the West Bank (29.4 per cent) children are more likely to be stunted from rural areas, probably due to greater poverty in the rural areas plus greater difficulties in accessing markets (PCBS. 2003).

School meals are not routinely provided in schools. Many schools have school canteens,

however, that are largely run by private businesses who allocate part of their profit to the Ministry of Education. A study was conducted by the School Health Unit of the MOH in the West Bank on foods sold at school canteens. More than 70 per cent of the products sold in the canteens were foods with poor nutritional value such as 'bamba' (cheese puffs), sweets and chips. This sets an unhealthy pattern of behaviour and attitude toward the consumption of food on the school premises and may lead to nutritional problems such as obesity and micronutrient deficiency (PCBS. 2003).

1.5.8. Housing and Housing Conditions:

In the early years of the 1950s UNRWA provided shelter in eight refugee camps and urban expansion in valuable agricultural areas. Israel's demolishing of houses, expropriating of land, and imposing of restrictions on the use of land remaining in Gazan ownership worsened the crises. Until 1994 Israeli occupation prevented the formulation of a Palestinian National Authority and thus a national strategy for housing. Gaza has suffered from a severe accommodation shortage for many years.

The housing condition has been characterized by high occupancy densities, with inadequate or non-existent facilities and infrastructure. Overcrowding is high in all communities, In recent years, rapidly deteriorating economic conditions have encouraged families to share houses.

The total number of housing units in the Palestinian Territory in 1997 was 466,651 housing units, 85.2% of them are residential only, the percentage of households owned their housing units in 2004 was 82.9%, and average housing density was 1.8 persons (PCBS, 2004b).

The Israeli army demolished 4,889 Palestinian homes in the Gaza Strip since the beginning

the Intifada, 2,704 of which have been completely destroyed (leaving 24,768 people homeless), and 2,185 partially destroyed (leaving 25,211 people in poor and intolerable housing conditions) (Bathish et al., 2005).

1.5.9. Sewage system:

Currently, about 70%-80% of the domestic wastewater produced in Gaza is discharged into the environment without treatment, either directly at the source, after collection from cesspits, through the effluent of the sewage system or from overloaded treatment plants. Most of the wastewater flows into the sea, but part infiltrates and contaminates the soil and the groundwater. Moreover, the discharge causes public health risks through direct exposure as well as through reuse of untreated wastewater on irrigated lands (Alfarra and Lubad, 2005).

Presently Gazan's access to sewage facilities varies from areas where more than 80% of households are served by well functioning sewage systems to areas where there is no sewage system at all. On average, it is estimated that about 70% of the population is connected to a sewage network. Cesspits and boreholes are the alternative waste water disposal systems in the area (Alfarra and Lubad, 2005).

1.5.10. Solid waste and Garbage collections:

Many infrastructure services connected to environmental health, such as solid waste management, were badly affected by the occupation. All stages of collection, transfer, and disposal, which were fully under Israeli control prior to the establishment of the Palestinian Authority in 1995, had not received adequate consideration and support.

The Palestinian Central Bureau of Statistics reported in 2001 that 137 randomly located

dumpsites were distributed in the Palestinian territories, the majority of 133 located in the West Bank. Although these dumps were once located in rural sections, urban areas expanded and many of these sites are now situated near residential areas. These open dumpsites, the only current method for the disposal of wastes, are threatening public health and the environment, especially in the locations where open-air burning of solid wastes is the only available technique to reduce the volume and odor.

1.5.11. Drinking water in Gaza strip:

A safe, clean, and adequate water supply is vital to the sustenance of all human beings. Gazans are being deprived of this essential element of life. The contaminated water results in an increase of water-related diseases such as kidney problems from high salininity and "blue baby syndrome" (methemoglobinemia) caused by elevated levels of nitrates, which hinders blood's ability to carry sufficient oxygen to the individual body cells., the aforementioned water quality issues have promulgated a variety of infectious diseases and disorders. Dr. Karen Assaf et al. (1993) declared that fifty percent of Gazan children have a parasitic infection at any given time.

An obvious consequence of the water shortage has been excessive dehydration. Gaza's arid climate necessitates substantial fluid intake, and even minimal levels of water consumption are not being satisfied. Accordingly, the Gazan people have been predisposed to weakness, lethargy, kidney dysfunction, and neurological symptoms. Infants and the elderly have especially been at risk.(Bellisari, 1994).

Chapter II

Review of Literature

As with any illness, a skin disease brings on a variety of life changes and challenges that we may not be prepared to deal with. However, unlike conditions, which do not change the way people look, skin problems raise a whole new set of challenges because of their visibility. The visibility of certain conditions may attract attention in social situations, thus making the individual feel that they can't keep their condition private or personal. Furthermore, owing to a lack of health education and awareness in dermatology, some people associate skin disease with contagion or lack of hygiene. This ignorance regarding skin conditions means that a skin disease patient may find that some people react negatively towards them or treat them differently because of the way that they look. In many cases the physical changes that may result from skin disease can have a negative effect on body image. Body image is our perception of the way that others see us, and therefore any sudden changes to the way that we look will have an affect on our body image. As skin diseases are not that well known or understood by the general public, it is quite likely that people's beliefs about various dermatological conditions and the way that people cope with them might be wrong.

In this chapter we will explain many issues as follow :

1- The effects of skin diseases

2- Some target skin diseases

3- Magnitude of the problem

4- Special prevalence studies of skin disease in general

5- Risk factors for skin diseases

6- Interventions

2.1 The effects of skin diseases

Consideration of the three concepts of impairment, disability and handicap may be helpful in separating those effects which result from disordered function from those which are conferred onto individuals by society. Impairment refers to the organic lesion produced by a disease, for example a broken limb; disability as the dysfunction which results from that impairment, for example not being able to walk; and handicap as the disadvantage that society confers upon the individual as a result of that impairment, for example unemployment. Handicap in skin disease may not be so explicit as that associated with a broken limb, but the psychological consequences of skin disease, which include "failure of display" (Ryan, 1994). Because skin disease is so common, a little bit of morbidity affecting a lot of people can add up to far more than a lot of morbidity affecting only a few people. It is this product of high prevalence times moderate morbidity that makes skin disease very important from the public health point of view. Small changes in health policy can have large financial implications simply because they affect so many people.

2.1.1. Disabilities due to loss of function:

Public sympathy and charity for people with skin disease is limited. This is surprising considering skin disease is so common and that it can affect people in so many ways. Thus scleroderma, both systemic and localized, directly restrict mobility and functioning of the limbs, and leg ulcers produce chronic pain and limit the ability to walk. Some inflammatory skin diseases such as occupational hand dermatitis or hand psoriasis confer a direct disability by affecting the ability to use one's hands.

The UK General Household Survey estimated that 16 per 1000 persons were affected by a long-standing skin disorder sufficiently severe to limit their activities (Breeze et al., 1991).

2.1.2. Mortality:

Overall mortality is relatively low for skin diseases, In Palestine there were only four deaths a cause of malignant melanoma of skin (MOH, 2003). Accounting for at least 2578 deaths in 1992 in the UK (or 0.46% of deaths from all causes and all ages). Melanoma skin cancer alone accounted for 1142 deaths in England and Wales in 1992, with 48% occurring in economically active adults. Mortality statistics of melanoma and non-melanoma skin cancer may be useful in discerning trends over time, which may be related to the biology or treatment of these diseases (Office of Population Censuses and Surveys, 1994).

2.1.3. Profound psychological effects :

In addition to physical symptoms, perhaps the most significant way in which skin disease affects people is the effect it has on that person's psychological well-being (Ryan, 1991). Disfiguring skin disease on visible sites such as the face (eg. acne) can result in loss of self-esteem, depression and poorer job prospects. Indeed, quality of life scores for people with skin disease are often worse than people with more traditional "medical" disorders such as angina and hypertension. The skin is therefore a sensitive and dynamic organ that has a crucial and frequently underestimated social function.

2.1.4. High economic costs:

Although it is true that skin disease is rarely life threatening, it is the product of its moderate morbidity times its high prevalence that places skin disease among the top four

chronic disease problems when entire communities are considered. Various studies have assessed the economic impact of specific skin diseases and these have shown that direct costs are as high as many other diseases, with much of that cost being borne by patients as well as the State. Small changes in the way this balance functions can have a profound effect on a country's health care budget because skin disease affects so many people (Williams, 1997).

Other costs such as unemployment and losing an economically viable sector of a country's workforce are also important when considered at a population level. Indirect costs e.g. the adverse effects on quality of life and the opportunity costs due to loss of time spent for daily topical therapy and skin care in many skin diseases also need to be considered in such economic evaluations.

2.2 Some target skin diseases

Skin is the largest organ of our bodies. It weighs about six pounds and holds us together. Skin provides the outer covering for our bodies and protects us from heat, light, injury and infection. The skin regulates body temperature by releasing fluids to cool it. The skin also stores water, fat and vitamin D, all things we need to survive and live**.**

Skin disease is any of the diseases or disorders that affect the human skin, There are a number of conditions that can change the look and the condition of the skin.

2.2.1. Head lice:

Head lice (*Pediculosis capitis*) infestation is common in children 3 to 12 years of age. The most common symptom is itching. Individuals with head lice infestation may scratch the scalp to alleviate itching, and there may be secondary bacterial skin infection. Head lice are

the cause of much embarrassment and misunderstanding, many unnecessary days lost from school and work (Barbara et al., 2002**).**

The adult louse is 2 to 3 mm long (the size of a sesame seed) and usually pale gray, although color may vary. The female lives up to 3 to 4 weeks and lays approximately 10 eggs, or nits, a day. These tiny eggs are firmly attached to the hair shaft close to the scalp with a glue-like substance produced by the louse. Viable nits camouflaged with pigment to match the hair color of the infested person are most easily seen at the posterior hairline. Empty nit casings are easier to see, appearing white against darker hair. The eggs are incubated by body heat and hatch in 10 to 14 days. Once the eggs hatch, nymphs leave the shell casing, grow for about 9 to 12 days, and mate, and then females lay eggs. If not treated, this cycle may repeat itself every 3 weeks (Meinking et al., 1995). While the louse is living on the head, it feeds by injecting small amounts of saliva and taking tiny amounts of blood from the scalp every few hours. This saliva may create an itchy irritation. With a first case of head lice, itching may not develop for 4 to 6 weeks, because it takes time to develop a sensitivity to louse saliva. Head lice usually survive for less than 1 day away from the scalp at normal room temperature, and their eggs cannot hatch at an ambient temperature lower than that near the scalp (Meinking, 1999).

Lice cannot hop or fly; they crawl. Transmission in most cases occurs by direct contact with the head of another infested individual (Chunge et al., 1991). Indirect spread through contact with personal belongings of an infested individual (combs, brushes, hats) is much less likely but cannot be excluded.

Guidelines for the detection and management of head lice have been issued by the CDC (2001), The most important step in treating a head lice infestation is to treat the person and other family members with head lice with medication to kill the lice. Wash clothing and

bedding worn or used by the infested person in the 2-day period just before treatment is started. After treatment, check hair and comb with a nit comb to remove nits and lice every 2-3 days. Continue to check for 2-3 weeks until you are sure all lice and nits are gone.

2.2.2. Scabies:

Scabies is an infestation of the skin with the microscopic mite Sarcoptes scabei. Sarcoptes scabei, human itch or mange mites, are in the arthropod class Arachnida, subclass Acari, family Sarcoptidae. The mites burrow into the skin but never below the stratum corneum. The burrows appear as raised serpentine lines up to several centimeters long. It should be noted that races of mites found on animals may establish infestations in humans. They may cause temporary itching due to dermatitis but they do not multiply on the human host. Like many other infectious diseases, it is transmitted by contact and therefore is a disease of overcrowding and poverty, but the role of poor hygiene is frequently overestimated. Thus, the stigma frequently associated with this and other ectoparasites such as head lice as markers of poor hygiene is misplaced. However, hygiene is thought to be important in the development and transmission of streptococcal skin sepsis following scabies (McCarthy et al., 2004).

When a person is infested with scabies mites for the first time, there is usually little evidence of infestation for the first month (range 2 to 6 weeks). After this time and in subsequent infestations, people usually become sensitized to mites and symptoms generally occur within 1 to 4 days. Mites burrowing under the skin cause a rash, which is most frequently found on the hands, particularly the webbing between the fingers; the folds of the wrist, elbow or knee; the penis; the breast; or the shoulder blades. Burrows and mites may be few in number and difficult to find in some cases. A popular "scabies rash"

may be seen in skin areas where female mites are absent, usually on the buttocks, scapular region and abdomen; this may be a result of sensitization from a previous infection. Most commonly there is severe itching, especially at night and frequently over much of the body, including areas where mites are undetectable. A more severe form of scabies that is more common among immunocompromised persons is called Norwegian scabies, characterized by vesicles and formation of thick crusts over the skin, accompanied by abundant mites but only slight itching. Complications due to infestation are usually caused by secondary bacterial infections from scratching.

2.2.3. Pityriasis alba:

Pityriasis alba is a chronic skin disorder that affects some children usually between the ages of 6 to 12. The cause of pityriasis alba is unknown.

Pityriasis alba is Latin for white, scaly patches and it is the most common cause for them in childhood. Children with this extremely common condition develop uneven, round or oval patches after sun exposure. Pityriasis alba is a relatively common skin disorder characterized by the presence of asymptomatic superficial hypopigmented macules with slight overlying scaling, located usually on the face, neck and shoulders, The light colored patch seems to blend gradually into normal appearing skin. Sometimes the rash is covered by very fine skin flakes resembling a light dust, The rash appears to get worse when the skin is dry. It is often thought of as a mild form or eczema. In the winter months when the skin is drier, the rash may be flakier. Pityriasis alba is most noticeable in the summertime when the surrounding skin gets tanner, because it remains the same color (Vinod, 2002).

2.2.4. Eczematous Diseases:

Eczema is a general term used to describe chronic skin inflammation with erythematous, pruritic, scaling, oozing, vesiculating, or crusting lesions. **Eczematous** disorders account for a large proportion of all skin disease, and constitute a major health problem worldwide. **Eczematous** dermatitis is characterized histologically by pathologic changes in the epidermis and a predominantly mononuclear cell infiltrate. The clinical features include itching, redness, papules, vesicles, and scaling (Singer et al., 1989).

There are various types of eczema, with slightly different causes and symptoms. Most are related to allergies or to contact with irritating chemicals. Some are associated with underlying medical conditions that cause fluid retention in the legs.

Atopic dermatitis (AD) is a chronic skin disease manifested by **eczematous** skin lesions that affects more than 10% of children. Individuals with atopic dermatitis often have other atopic diseases, such as asthma and hay fever. The prevalence of eczema and atopic dermatitis appears to have increased in recent years, especially among children (Henderson et al., 1999). There are other types of eczema such as Contact dermatitis, Discoid eczema, Varicose eczema, Hand eczema, asteatotic eczema and Lichen simplex chronicus**.**

2.2.5. Infectious skin diseases:

Approximately 5% of the general population develops a skin infection each year, leading to a significant number of outpatient visits to the primary care physician. Bacteria, infestations, fungi, yeasts, and viruses are organisms that present with a myriad of cutaneous findings that pose a challenge to the investigating clinician (Trent et al., 2001).

2.2.5.1. Bacterial Skin Infections:

The skin is the body's first barrier against bacteria that cause infections. Even though many bacteria live on the surface of our skin, healthy skin can usually protect us from infection. Bacterial skin infections can affect a small spot or may spread, affecting a large area. They can range from a treatable infection to a life-threatening skin condition.

Anyone who has a break in the skin is at risk for infection. Predisposing factors to infection include minor trauma, preexisting skin disease, poor hygiene, and, rarely, impaired host immunity. There are many types of bacterial skin infections that require clinical care by a physician or other healthcare professional. There are some types of Bacterial Skin Infections such as Impetigo, Cellulitis, Folliculitis, Boils, Carbuncles. Staphylococcal Scalded Skin Syndrome

2.2.5.2. Fungal infections:

Dermatophytosis implies infection with fungi, organisms with high affinity for keratinized tissue, such as the skin, nails, and hair. Two main groups of fungi infect man: **Dermatophyt group** such as Tinea corporis, Tinea cruris, Tinea manuum Onychomycosis, Tinea pedis, Tinea capitis and Tinea barb. The second group is **Candidiasis,** which is Yeast infection found in intertriginous and mucocutaneous areas where heat and maceration provide a fertile environment.

2.2.5.3. Viral Skin Infections:

Many viral infections in childhood are called "viral exanthems." Exanthem is another name for a rash or skin eruption. Some groups of viruses cause the majority of viral skin infections, including the following:

- Warts

- Herpes Simplex

- Molluscum Contagiosum

- Chicken pox

2.3 Magnitude of the problem

Making comparisons between countries is difficult as survey methods have differed in terms of population ages, method of sample selection, and classification of diseases. The distinction between any form of skin disease and that which would benefit from medical care is particularly prone to vary according to the views of the dermatologist examiner and availability of local services. Even so, some general points can be made regarding the prevalence surveys in developing countries: skin diseases are very common; infections and infestations predominate; skin diseases are most common among the younger age groups; and most are easily treated. Making such generalizations is always hazardous, as even within 'developing' countries, urban pockets may occur with a disease spectrum very similar to developed countries (Williams, 1998).

It is always assumed that the prevalence of skin diseases in developing countries is very high, and that infestations and skin infections are highly endemic in poor rural communities; however, very few epidemiologic reports verify these assumptions.

Virtually nothing is known about the prevalence of skin conditions in children in the general population in Gaza Strip. Although we know something about the relative frequency of skin conditions seen by dermatologists (MOH, 2002), we do not know how such referrals are influenced by factors such as social class, accessibility to medical services or educational and cultural background.

In **Gaza strip**, Based on the MOH annual report 2002, 36,146 new cases of different skin

diseases were reported, these diseases were bacterial infection 11.6% , viral infection 8.5%, tinea 14.65%, eczematous diseases 17.85%, cutaneous parasitic infestation 31.4 % , papulo squamous diseases 5.9% (MOH 2002).

The school health team examined students in the 1st, 2th and 10th grade in Gaza strip and West Bank, They found that the prevalence of skin diseases is 0.56% and Lice 4.16% and scabies 0.08%. (MOH, 2002).

In Nablus area (Palestine), A study of tinea capitis was carried out during October 1998, involving 8531 school children aged 6-14 years (4718 males and 3813 females), attending 12 primary schools located in urban, rural, and refugee camp communities . Using the hair brush technique, for prevalence of asymptomatic tinea capitis carriage. Twenty-three (0.27%) mycologically proven cases of tinea capitis were detected (Shtayeh et al., 2002).

Generally speaking routinely published medical statistics on skin disorders are scanty, and when available, are of limited use to the dermatologist in describing the burden of skin disease in the community. Special surveys are usually required to determine the prevalence and morbidity of skin diseases in general or specific skin diseases.

El Badawy et al. (2000) estimated the prevalence of the commonest types of skin diseases among school students in Zagazig district, Egypt, and examined the various factors that might be associated with its occurrence. Clinical examination of the skin of the selected school students was carried out and the diagnosis was confirmed by the necessary laboratory tests whenever needed, the overall prevalence was found to be 66.8%, ranging from 2.2% for viral infection to 24.1% for parasitic infestation. The commonest associated factors were: sex (more among females), age (increase with age), residence (more in rural), low level of parental education and low socio-economic conditions and finally lack of

personal hygiene and bad health habits.

In Cairo, Egypt Morsy et al. (2001), revealed that head louse, are still a public health problem particularly among female students in the primary and preparatory schools. In the secondary school prevalence rate of the lice infestation was low. Examining students in primary, preparatory and secondary schools recorded prevalence rates of 21.86%, 30.38% and 12.94% respectively. The overall rate of the lice infestation in the three schools was 21.67%. The prevalence rate of lice infestation among males and females were 17.02% & 37.8% (primary school), 27.8% & 33.1% (preparatory school), and 12.0% & 13.9% (secondary school).

In Assiut Governorate, Upper Egypt Abdel-Hafez et al. (2003) showed that 86.93% of the studied population had one or more skin diseases. The group with parasitic skin infestations had the highest prevalence rate (27.40%) of the total sample, of which pediculosis capitis (19.37%) was the commonest. Eczema/dermatitis group had a rate of 19.82%, with pityriasis alba forming the majority (13.49%). Pigmentary disorders were 17.68%, followed by fungal skin infections (16.17%), then naevoid disorders (16.10%), hair and scalp disorders (12.07%), bacterial skin infections (10.10%), sweat gland disorders (6.16%), acne vulgaris (5.37%).

Shakkouy et al. (1999) determined the prevalence of skin disorders and their relation to age and nationality in Amman, Jordan. The overall prevalence of skin disorders was 19.23%, with leukonychia 36.6 %, naevi 12.8% and head lice (11.0 %) being the most common. Head lice were found more frequently among the Jordanian (11.6%) than non-Jordanian (8.3%) schoolchildren.

A cross-sectional study was carried out Abha, Saudi Arabia, to determine the prevalence of

skin diseases. The age of the boys ranged from 11 to 19 years , It was found that 19.8% of the children were affected by one form or another of transmissible skin diseases (TSD). The most common types were pediculosis capitis (9.6%), verruca vulgaris (3.9%), and tinea pedis (1.9%). The prevalence of TSD increased significantly as the age decreased and as the crowding index increased. As for non-transmissible skin diseases, acne vulgaris was the most prevalent disease (56.3%) (Bahamdan et al., 1996).

.In Turkey, Inanir et al. (2002) determined the prevalence of skin conditions and associated socioeconomic factors in primary school children in Turkey. His study indicated that Infectious skin diseases were frequently observed: pediculosis capitis in (9.4%) of children, scabies in (2.2%), viral skin diseases in (3.8%), and fungal infections in (0.7%).

To date, no comprehensive surveys of the prevalence of skin diseases as a whole have been conducted across Europe. Surveys in individual countries suggest that skin conditions as a whole represent a large and important problem (Johnson, 1978, Rea et al. 1976,). Thus, one survey of adults in London suggested that 22.5% had a skin disease that could benefit from medical care, yet only 24% of such individuals with moderate to severe skin disease had made use of medical services in the last 6 months (Rea et al. 1976). Frequent travel between countries and abroad, migrant people in search of work, and widening socio-economic divides are also factors that could contribute to increases in infectious skin and venereal diseases.

2.4 Special prevalence studies of skin disease in general:

Epidemiology refers to the study of the distribution and causes of diseases in human populations (Grob et al., 1997). Epidemiology as applied to dermatology is thus concerned with finding out more about issues such as how many people suffer from skin disease in a

given community, and the different ways that such skin diseases affect people in terms of adverse quality of life and loss of employment. More importantly, by contrasting affected people against those without disease with respect to a range of plausible causes, epidemiology offers one of the simplest and most direct ways of evaluating the causes of skin diseases in populations. Knowledge of causes then opens up the possibility for prevention of skin and venereal disease and perhaps more appropriate way of approaching the problem of skin disease at a population level than investment into expensive drugs, which may often only modify established disease.

Although epidemiology is often perceived as a novel addition to dermatology, the first epidemiological discoveries in dermatology can be traced back to 1746, when James Lind (1753) concluded that scurvy in sailors was related to dietary factors. He then showed by means of a controlled study, that the disease readily responded to the addition of fresh oranges and lemons in the sailors' diet. In 1914, Joseph Goldberger observed that 8% of 418 patients admitted to the Georgia State Sanatorium developed pellagra compared with none of the 293 Sanatorium employees. He suggested that pellagra was due to an absence of 'essential vitamins', today recognized as nicotinic acid, and proceeded to test his suggestion in a community trial (Klevay, 1997). Thus dermato-epidemiology is not such a new subject, and with over 2000 skin disease reactions patterns described, the scope of the topic is vast.

2.4.1. Examined skin disease:

Two population surveys, conducted in the 1970s, have produced useful data on the relationship between the need, supply and demand for dermatological care.

In a study of 2180 adults in **Lambeth** who were examined for skin disease-(rea 1976), it

was shown that for those with moderate/severe skin disease, only 24% made use of any medical service in the past (6) months. A further 30% used self-medication. Medical usage was still considerable for those with trivial skin disease with 10% using medical services and 33% self-medicating.

Another detailed cross-sectional study of skin diseases was conducted within the first US Health and Nutrition Examination Survey **(HANES-1)** (Johnson, 1978). In this study, there was a considerable mismatch between what the dermatologists considered to represent medical need and what the population were concerned about. Only one-third (31%) of persons with significant skin pathology diagnosed by the dermatologists expressed concern about these specific skin conditions, who complained about their skin conditions , were not considered as serious by the dermatologists.

Thus, both of these population studies suggest that at any one time, around one-quarter to one-third of the population have a skin problem which could benefit from medical care, yet around 80% do not seek medical help.

Both of these studies therefore suggest that significant skin disease is extremely common. Even though dermatology is characterized by an enormous range of disease-reaction patterns, prevalence surveys suggest that the bulk of the skin disease problem is made up of less than 10 disease groups (Williams, 1997). These two large population studies also suggest that most individuals with skin disease do not seek medical help. Knowledge of this submerged section of the dermatological iceberg is important as small changes in the population's perception of the need for medical help can have large effect on the delivery of health care.

2.4.2. Self-reported skin disease:

In 1986, the Proprietary Association of Great Britain commissioned a detailed nationwide survey of 1217 adults and the parents of 342 children to determine how British people manage minor ailments and some chronic recurring illnesses (The British Market Research Bureau, 1987). Skin complaints were the commonest ailment reported in the previous 2 weeks. In addition to estimating the age- and sex-specific incidence of skin complaints over a 2-week period, the study provides a useful estimate of the proportion of skin complaints that are not considered by the public to be sufficiently severe to Seek medical care, and the potential service implication should that threshold change. For example, of the 291 people complaining of acne/spots/greasy skin, 47% took no action, 34% used or bought an over-the-counter preparation, and 12% used medicines prescribed by a doctor, the remaining 7% using home remedies.

Similar proportions of self-reported 'skin disease in the last 2 weeks' have been recorded in two earlier studies (Dunnell, 1972). A survey of 20000 randomly chosen residents aged 20-65 years in Gothenburg, Sweden, found that 27% of females and 25% of males reported symptoms of skin disease in the last 12 months (Meding, 1992).

2.5 Risk factors for skin diseases

The causes of some skin diseases are already established, for example the herpes simplex virus causes cold sores, but for most dermatological conditions, the causes are unknown. Nevertheless, epidemiological research has already established many risk factors for skin diseases which may be help to serve as pointers to specific causes. Direct manipulation of these risk factors may help in preventing or reducing disease even before the specific cause is found.

Risk factors for skin disease may operate at many different levels. Some may predispose to

disease (e.g. a mother with atopic eczema predisposes her child to atopic eczema), some may precipitate disease (e.g. exposure to high levels of house-dust mite may precipitate atopic eczema for the first time), and some may be important in perpetuating that disease (e.g. failure to use prescribed treatments may worsen the course of atopic eczema).

Researchers evaluate wide-variety of Risk factors that indicate a higher chance of acquiring skin diseases, Some of the commonest risk factors for skin disease are discussed below.

2.5.1. Age and Sex:

Age and sex are often included in the descriptive epidemiology of many skin diseases and may point to further risk factors. The marked preponderance of females in lichen sclerosus, for example, suggests that hormonal factors may be important in this disease.

During the last century the median life expectancy increased widely in the world. According to recent prognoses, this trend will continue over the next decades. Not only the number of people older than 60 years but also its percentage within the population has and will continue to increase dramatically. This has important socio-economic, political and health-economic consequences. The increasingly older population has an important impact on dermatology. The incidence of many skin diseases increases with age because of long-term exposure to exogenous factors such as UV irradiation. Aging processes especially affect the skin.

A study conducted among adolescent boys in Abha, Saudi Arabia found that the prevalence of transmissible skin diseases (TSD) increased significantly as the age decreased, and inversely, the prevalence and severity of acne increased significantly as the age increased (Bahamdan et al., 1995).

In Assiut Governorate, Egypt. Researchers found that Infective-parasitic diseases were a major problem particularly among the younger age-group and those of low socio-economic status (Abdel-Hafez et al., 2003).

Further, A prospective survey done in Kuwait found that atopic dermatitis was the most frequently seen dermatosis in children of all age groups, whereas, viral warts were more prevalent in school-age children. A female preponderance was seen in children with alopecia areata, psoriasis, vitiligo, acne vulgaris, contact dermatitis, and pityriasis rosea (Nanda et al., 1999). Inanir et al. (2002) found that Pediculosis capitis, acne, and dandruff were more common in girls.

2.5.2. Ethnic group:

Ethnic group may account for some variations in disease rates. Thus, it has been shown that atopic eczema is twice as common in black Caribbean children when compared with similar white children (Williams et al., 1995) and conversely, mortality from most cancers is less common in black ethnic groups in the UK (Marmot et al., 1985).

Ethnic group, which refers to a way of life encompassing a whole range of dietary and cultural factors, must be distinguished from racial factors (Silver, 1995), which are often more difficult to define because of the considerable mixing of modern populations. Care also has to be taken in lumping many distinct ethnic groups together, for example combining the diverse cultures of black African and black Caribbean into 'blacks' may be totally inappropriate, both in terms of respecting the identity of the separate cultures and because such lumping together may obscure important epidemiological associations (Bhopal, 1992),

2.5.3. Migration:

Migration itself may be an important factor in determining skin diseases. for example individuals who migrated from China (where atopic eczema is not very common) developed much higher rates of disease (similar to the rates in the local population), after migration to Hawaii (Worth 1962), Migrants may not be totally representative of their indigenous peoples, but they may nevertheless show the effect of the environment in determining the frequency of skin disease.

2.5.4. Socio-economic factors:

Socio-economic factors may also be crucial in accounting for the distribution of skin disease. In many poorer countries where overcrowding and poor sanitation may occur, infectious or parasitic skin diseases such as secondarily infected scabies or pediculosis are commoner (Gbakima, 1992). In wealthier countries where such infectious dermatoses are less common, new 'diseases' such as concern regarding the cosmetic appearance of sun-damaged skin or thread veins may preoccupy the population in their quest for a perfect skin. Some skin diseases, such as atopic eczema, also demonstrate a genuine positive social class trend, i.e. higher prevalence in more wealthy groups (Williams 1994). Some of this increase in reported eczema may have been due to differences in reporting between socio-economic groups, but other genuine environmental factors such as hygiene, carpets, central heating, family size or differences in treatment also probably play a part.

The rate of infections, atopic dermatitis, xerosis, and pityriasis alba were significantly higher in the school children with poor socioeconomic conditions (Inanir, 2002). Bahamdan (1995) found that the prevalence of transmissible skin disease (TSD) increased significantly as the crowding index increased. **Schmeller** (2001) found that the prevalence of dermatoses in children in rural Africa does not only depend on treatment schemes within the primary health care system, but on the socio-economic conditions available.

2.5.5. Infections and ectoparasitic:

In some countries, infectious skin diseases may account for the bulk of skin diseases presenting to primary care physicians. These diseases such as head lice, scabies, impetigo, infected bites, boils, cellulitis, fungal infections and venereal diseases such as gonorrhea, syphilis and non-specific arthritis still abound even though effective treatments are readily available**.**

Ectoparasites consume a large burden of health care resources (Downs et al. 1999), especially when treating epidemics of head lice in schoolchildren and scabies outbreaks in nursing homes**.**

2.5.6. Geography and climate:

Geography and climate are important considerations in describing the frequency of skin disease. Thus, consideration of the marked latitude gradient of melanoma skin cancer in white-skinned peoples has supported the concept that exposure to sunlight is an important risk factor for this disease (Weinstock, 1997). The combination of temperature, rainfall and humidity may be crucial to sustain certain infectious disease vectors such as the *Simulian* fly in onchocerciasis or they may account for seasonal fluctuations in pyoderma secondary to scabies during the the wet season in Lilongwe in Malawi (Kristensen, 1991). In an economically deprived black population in southern United States of America, the incidence of pyoderma in children aged 2-6 years was found to reach 50% during humid summer months *vs.* 4% in winter (Nelson et al., 1976). In rural Gambia the examination of the same community showed a prevalence of pyoderma of 8.9% during the wet season *vs.* 7.2% in the dry season; this seasonal difference was much more marked in children under 10 years of age (Porter, 1979).

2.5.7. Occupational factors:

The skin is the largest organ in the body and one of its main functions is to protect the body from noxious substances, whether they are ultraviolet radiation, toxic chemicals or prolonged/repeated exposure to water. It is the level of exposure that determines if damage to the organism will result. The harm that can occur to the skin with sufficient exposure will be considered. Exposure may occur at home or during normal day-to-day activities. But most environmental exposure to harmful substances will occur at work.

Occupational factors are occasionally a very important factor for skin disease. Thus, exposure to irritants and contact sensitizers in light and heavy industry accounts for a very large burden of hand dermatitis and lost revenue for both individuals and the State. Certain occupations, for example mining, where workers are constantly exposed to damp conditions, may predispose to fungal infections. Some diseases may occasionally occur in outbreaks from work-related substances, for example chloracne and dioxins, vinyl chloride disease, and hydroquinone-induced leucomelanoderma.

Occupational skin diseases may represent a major burden to some industries (Diepgen and Coenraads, 1999). Those that involve high exposure to irritant oils, soaps and wet work such as metal workers in the motor industry, hairdressers and nurses seem to get the worst problems. Other occupations are associated with specific allergic reactions e.g. those handling epoxy resin or cement workers exposed to chromate. Such reactions may lead to lifelong sensitivity and permanent loss from the workforce.

2.5.8. Dietary factors:

Dietary factors may be crucial in some skin diseases. As the example of vitamin deficiency states may directly cause skin diseases. Other deficiency diseases with skin manifestation such as acrodermatitis enteropathica are completely reversible with administration of the appropriate agent, in this case zinc. Some diseases like phenylketonuria and dermatitis herpetiformis may be transformed by restricting substances which affected individuals cannot handle, for example phenylalanine and gluten, respectively. Some skin diseases such as atopic eczema and acute urticaria may be modified by avoidance of dietary allergens in a proportion of cases.

2.5.9. Genetics:

In addition to a few rare diseases such as epidermolysis bullosa, where specific chromosomal mutations have been closely correlated with different disease phenotypes, several genes may be important in many of the major inflammatory skin diseases. Some genes may be responsible for disease predisposition and some may be responsible for disease severity.

Few structural or functional characteristics of the skin are not dependent, at least in part, on the genetic constitution (genotype) of the individual. The color and texture of the skin, its thickness, its extensibility and the complex factors modifying the pattern of its response to physical and chemical trauma or to bacterial invasion largely so determined. Those traits that display a continuous range of variation the graded characters depend on multifactorial or polygenic inheritance.

2.5.10. Sun damage:

Sunlight exposure produces a variety of adverse cutaneous effects. Erythema, photosensitivity, and immunologic alterations represent acute events, whereas photoaging and carcinogenesis are long-term consequences. These adverse cutaneous sequelae can be minimized by photo protection in the form of sun avoidance, regular cover-up with clothing, and sunscreen application (Charles et al. 1996).

Much epidemiological work in dermatology has evaluated the role of excessive ultraviolet light exposure in the various form of skin cancer. Whilst excessive sun is an important risk factor for skin cancer.

The damaging effects of ultraviolet on skin consist principally of direct cellular damage and alterations in immunologic function. Direct effects include photoaging, DNA damage and carcinogenesis. When incident ultraviolet strikes human skin, it is absorbed at various wavelength-dependent depths by molecular species with the capacity to absorb it (protein, DNA, lipids, water). The sum of the photochemical interactions resulting from this absorption, combined with secondary interactions, notably with oxygen species, is ultimately responsible for UV-induced damage.

Chronic exposure to sunlight accentuates and accelerates many of the changes of intrinsic aging, including telangietasia, blotchy pigmentation, loss of elasticity, and thinning (Leyden, 1990). While thickening of the epidermis may be a short-term effect of sun exposure, the eventual result will be exacerbation of the age-associated thinning (Richard et al., 1994).

2.5.11. Environmental effects:

The skin is the largest organ in the body and one of its main functions is to protect the body from noxious substances, whether they are ultraviolet radiation, toxic chemicals or prolonged/repeated exposure to water. It is the level of exposure that determines if damage to the organism will result. The harm that can occur to the skin with sufficient exposure will be considered. Environmental exposure is important in the etiology of Contact dermatitis, halogen acne, chemical depigmentation, connective tissue diseases and skin cancer. Most environmental exposure to harmful substances will occur at work, but exposure may occur at home or during normal day-to-day activities (English et al., 2003)

2.6 Interventions

2.6.1. The public health approach:

Interesting patterns can occur when one explores the potential implications of treating an entire community (the public health approach) rather than sick individuals who present themselves to doctors (the high-risk approach).

During the scabies epidemics which occurred on the islands near Panama in the 1980s (Taplin et al., 1991), it was found that even the best topical treatments when administered properly had no sustainable impact on the overall prevalence of scabies (which was very high in this population and associated with considerable morbidity from secondary pyoderma). When a population approach was adopted, treating all individuals with a programme of continuing surveillance, the prevalence of scabies fell dramatically to less than 2%, and was sustained at that level until the US invasion of Panama interrupted these efforts. Thus, just as individuals become 'diseased', entire populations can become sick) (Rose, 1988). In these situations, a treatment policy based on a population diagnosis is usually beneficial,

2.6.2. Health policies:

Anxiety on the communicable level of head lice often occurs in communities hit by the disease. Embarrassment and social stigma frequently accompany identification of infestation. Schools may be blamed as the source of contraction for students. Historically, in an effort to decrease head lice infestations, many U.S. schools adopted "no nit" policies. Subsequently, schools report extended student absences related to chronic infestation in certain students. Study of attendance records found 12 to 24 million school days are lost annually in the U.S. due to exclusion of students for nits (Price et al., 1999).

2.6.3. Prevention of skin disease:

Prevention of skin disease is still at a very early stage, even though the knowledge to formulate some preventative strategies is already available. Thus, measures aimed at changing the public's behavior to avoid excessive sun exposure and to recognize the visible signs of melanoma and seeking advice at an early stage (especially those at high risk of disease) may have already had a substantial impact on reducing the mortality of this devastating disease (Hywel et al., 2000). Other studies in Europe have suggested that at least one third of children born to parents with allergic disease can be prevented from developing atopic eczema through a range of measures aimed at reducing allergic factors before or around birth (Mar and Marks, 2000). Better labeling of cosmetic ingredients and working substances, along with legislation to reduce harmful exposures, may play an important part in reducing contact dermatitis. In Denmark for instance, the introduction of legislation to reduce nickel contact with the skin might have contributed to reducing nickel dermatitis, which can affect up to 20% of young women. Infectious skin diseases, such as outbreaks of fungal infections of the scalp, or head lice, are all preventable to some degree.

2.6.4. Health education:

Sarov et al. (1988) conducted an intervention program for head lice infestation in school children, which included "health education" for children and parents and free medicated shampoo (with pediculocides) provided for each child detected as "positive." Evaluation of the intervention program revealed a significant success in reducing head lice infestation that was not influenced by variation in socioeconomic status or place of residence.

Further another study conducted in Mexico by Paredes et al. (1997), explored the effect of health education provided by teachers and improving the management and prevention of skin disease. The study emphasized the potential value of simple, but effective, health education provided by school teaching staff through liaison with patents in the amelioration of endemic disease.

Chapter III

Conceptual Framework

Epidemiology offers one of the simplest and most direct ways of evaluating the causes of skin diseases in population. Knowledge of causes then opens up the possibility for prevention of skin diseases, and it perhaps more appropriate way of approaching the problem of skin disease at a population level than investment into expensive drugs.

Overview of the conceptual framework

Skin disorders are among the most frequent diseases of schoolchildren in both developing and industrialized countries (Shakkoury et al., 1999) The school environment makes children vulnerable to cross transmission of communicable skin diseases among themselves and their families. Although children with dermatological problems represent the largest proportion of patients attending dermatology clinics, no attempts had been made in Gaza Strip to study the prevalence and associated risk factors of various skin problems among children. Therefore, we investigated the prevalence of some common communicable and non communicable skin disorders among schoolchildren and their relation to demographic and socioeconomic status.

As described in the model, many determinants are associated with an increased frequency of skin diseases, These determinants can be socioeconomic, environmental, behavioural (such as occupation), dietery (such as deficiency of vitamins) or genetic factors. Low socioeconomic status, malnutrition, overcrowding, and poor standards of hygiene are important factors accounting for the distribution of skin diseases in developing contries such as Palestine .

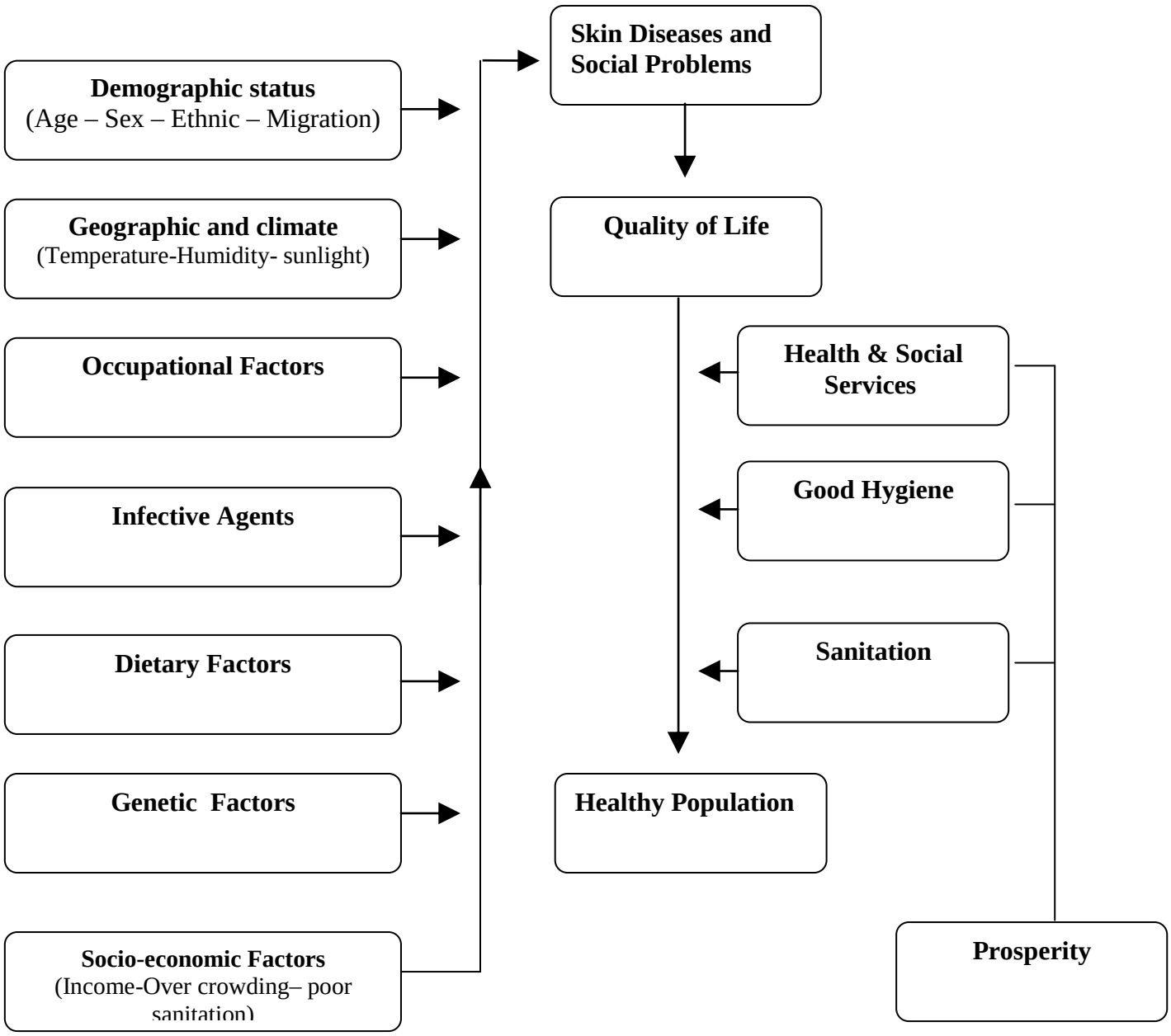


Fig 3.1: A conceptual model of the determinants of skin diseases

There are a number of environmental and social factors, that determine the range of arthropod species to which an individual is exposed. Persons living and working in tropical climates tend to wear fewer clothes, and therefore expose larger areas of the body to bites and stings. Clothing itself is essential to the existence of the body louse, and areas of constriction of clothing affect the distribution of the skin lesions caused by certain mites (e.g. harvest mites).

Housing can influence exposure to arthropod attack in a number of ways. Overcrowded homes favour transmission of ectoparasites, such as lice and the scabies mite, and dilapidated housing provides an ideal habitat for bed bugs. Spiders and scorpions will take up residence in garages, outhouses and woodpiles.

Access to safe water and environmental sanitation are vital for the dignity and health of all people, and it is especially important in ensuring the healthy development of children. Yet every year around 2.2 million children die from diarrhoeal related diseases. The majority of these diseases are contracted as a result of poor quality drinking water, inappropriate hygiene practices or inadequate sanitary facilities. This rate is equivalent to one child dying every 15 seconds (WHO, 2000).

Although the situation has improved in the last decade, there is still great need; at the beginning of 2000, over a billion people lacked access to adequate and safe water supply and around 2.4 billion people still lacked basic safe sanitation facilities.

These causes and their effects on health and quality of life can be modified to various degrees by prevention and health promotion, treatment, rehabilitation and other health care. Such interventions are supported by human and material resources and associated systems, including essential information via research, monitoring and evaluation.

Poverty and ill-health are intertwined. Poor countries tend to have worse health outcomes than better-off countries. Within countries, poor people have worse health outcomes than better-off people.

The occupational history should be recorded. As part of the general history, an outline of present and past employment suffices. Past occupations may be of great significance in present illnesses, especially in relation to exposure to carcinogens or metal sensitivity.

School years bring exposure to a wide variety of infections and contagions, such as measles, chickenpox, impetigo, warts, molluscum contagiosum, scabies and head lice. There is also a gradual increase in contact with potential irritants at school during lessons, in sporting activities such as swimming and team games, and in hobbies. The wearing of jewellery and cosmetics.

The World Health Organization (WHO) estimates that more than one billion of the world's population is chronically infected with soil-transmitted helminthes and 200 million are infected with schistosomes (Montresor et al., 1998). The high prevalence of these infections is closely correlated with poverty, poor environmental hygiene and impoverished health services (Albonico et al., 1999).

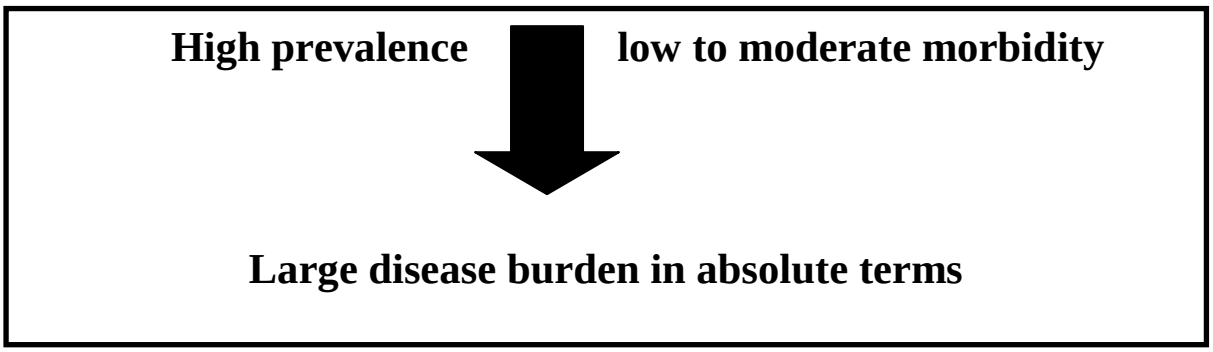
Having a country that is socially and economically ‘healthy’ is arguably the most important factor in ensuring a good average level of health in the population. These general influences in turn affect other major factors that interact and lead to differences among individuals in their health—such as their educational and income levels, their choices about healthy living and so forth.

Prevention of skin disease is more desirable than investment in expensive treatments and technologies for sick individuals who present themselves at the end of a long chain of

pathological events. The high prevalence of many skin conditions combined with knowledge of their causes makes some of them an ideal target for future public health intervention programmes. Infectious skin diseases such as scabies, head lice and scalp ringworm outbreaks (Taplin, Porcelain, and Meinking, 1991) are obvious examples of appropriate management utilizing a public health approach in order to facilitate disease control at a population level.

Despite the magnitude of skin disease morbidity in the general population, health services research for dermatological disorders has been minimal. Urgent research into the prevalence, incidence and cost of skin diseases is required in order to formulate public health strategies to respond to the impending crisis of increased demand for services .

Skin disease is a major public health problem: a little bit of misery, affecting a lot of people can add up to more than serious illnesses which affect only a few people in public health terms.



Chapter IV

Methodology

This chapter explains the methodology used in this study. Firstly, the researcher explains the selected design of this study, sample, sampling process. After that, the instrument used in this study. Method of validation, pilot study, and data collection were discussed. This chapter also explains the method of analyses, eligibility criteria and the limitation of this study.

4.1 Study design

The study is a quantitative, cross-sectional study, population are the school children in three localities in Gaza, Palestine. The cross-sectional study will involve getting the baseline data for the study population. This includes information on prevalence of the condition. This approach facilitates examination of the relationship between the concerned problem and suspected exposures. Treatment for infected children had been given during the study time.

In this study we chose cross-sectional design to asses the prevalence of skin diseases and to study the effect of Socio-Economic, demographic and environmental factors.Cross-sectional studies are relatively easy, economical, and quick to conduct in short time (Mann, 2003).

4.2 Study population

Based on PCBS reports, the Educational Institutions 2004/2005 included 1,078,488 students (pupils) attending schools in Palestine, out of them 637,613 are in the West Bank

and 440,875 in Gaza Strip (PCBS, 2004a). In this study, the study population included all schoolchildren in the 1st and 6th grades in East and West of Gaza governorate and North governorate of Gaza Strip.

4.3 Place of the study

The study in Gaza strip has been conducted in two governorates, Gaza Governorate with population approximately 360,000 and North Gaza Governorate with population approximately 180,000 inhabitants (PCBS, 2004 b).

In Gaza Governorate and because of the variation between localities, two localities were chosen West Gaza (relatively richer) and East Gaza (the old city).

Six governmental primary schools in three different socioeconomic areas of Gaza Strip (East, West and North of Gaza) were selected. The researcher excluded governmental primary schools in the Middle and South governorate. This was because of the difficulty to be there due to the unstable and extreme political situation in Gaza Strip during the time of data collection for this study.

4.4 Sampling design

The sampling process is a multistage stratified random sampling technique with proportional allocation. First, the researcher choosed two governorate (Gaza Governorate and North Gaza Governorate) by convenience due to unstability of the exterior environments, And he choused two localities in Gaza Governorate for socioeconomic considerations. The list of primary schools was obtained from the department of school health in Gaza Strip. In the second stage study schools were randomly selected for the study, From each locality we choose two primary schools, one for males and the other for

females,. From each school, sections of the 1st and 6th grades students were selected by simple random sampling. In schools where there were only one section , the section was included. Then, all students who were aged 6 and 12 years were enrolled in the study. Children of these ages were selected to compare between the two ages.

Table 4.1 Distribution of school children

Sex of pupil	West Gaza		North of Gaza		East Gaza		Total
	Al_qahera School	Sulman ben Sultan school	Rafii School	Jabalia School	Al-Qastal School	Al-Nassera School	
Male	0	37	69	0	55	0	161
Female	40	0	0	82	0	76	198
Total	40	37	69	82	55	76	359

4.5 Study period

The administrative procedures including the authorization of the Ministry of Education took place at the begging of Mars 2005 , Then a pilot study was conducted . Finally, data collection started in 2/4/2005 and completed in 10/5/2005. Data analysis and writing the report continued till March 2006.

4.6 Sample size

The **EPI Info. 6** (Epidemiological information statistical program, version 6) was used to calculate the sample size necessary to detect at least 15% in the prevalence of skin diseases

among school children with 95% confidence intervals, a sample of 360 children was estimated. The subjects was chosen from 3 localities, every locality composed of two schools, one is male primary school and the other is female primary school.

4.7 Instrumentation

All data collection was done by the researcher and the clinical examination done by a dermatologist, Self-administered designed structured questionnaires were distributed to all selected schoolchildren a few days before clinical examination, to be completed by their parents. The questionnaires were then collected on a daily basis. Informed consent for inclusion in the study was obtained from the parents by invitations accompanied by a letter explaining the purpose and details of the study (annex 5).

In this study, two instruments were used as follows:

1. Questionnaires were used to collect demographic and socio-economic data and data about child hygiene practice (Annex 6).
2. Clinical assessment was used by dermatologist to diagnose infected children, the diagnosis was added to the questionnaire (Annex 7).

4.7.1. Questionnaire design and preparation:

The questionnaire was drowned in Arabic to be understood by the parents of the pupils. The questions are arranged in logical order, proper sequencing starting with personal data to break ice. The questionnaire takes about 12-15 minutes to answer. The Questionnaire was composed of the following categories of data:

- Personal and demographic data
- Environmental , socioeconomic data

- Hygienic practices
- Environmental data about the place of living.

4.7.2. Clinical assessment:

All the selected schoolchildren were examined by an experienced dermatologist in a private room in daylight in the same school. The body surface of each child, except for the part covered by underwear, was examined. Diagnoses of most diseases were made clinically and did not require laboratory investigations. Children were referred to a specialized center whenever indicated. The family of child was informed if any serious or infectious disease were detected. For the other infected children, appropriate treatment was prescribed at the time of examination**.**

4.8 Validity of the instruments

In order to validate the instruments of the study, the researcher sent the instrument to committee of twelve experts, sex dermatologists, three experts in public health and three workers in school health program. Their comments were very useful so we done changes in the instrument according to their advices.

4.9 Piloting

A pilot study has been conducted before starting the data collection to check whether the questions is obvious for the parents and to check the extent to which they had met the study objectives and to identify any defect in the questionnaire design. The pilot test was conducted on a non-random sample of primary school children. The pilot sample size was twenty two subjects and the response rate was 100%.

In the light of pilot study, some changes were done in the questions and in the way of

diagnosis. The pilot subjects were excluded from the sample.

4.10 Data collection

The researcher and the dermatologist did all data collection. The procedure was as follows: pupils were given full explanation about the study and its purpose and about skin diseases, and then they asked to fill the questionnaire forms (with the help of their parents) which distributed to them in their classes before three days of the day of diagnoses. After three days, the researcher collected the questionnaire from each child, then Clinical Assessment was used by dermatologist to diagnose infected children.

4.11 Data entry:

Overview of questionnaires was the first step, the number of questionnaires was 380, twenty-one questionnaires were excluded (because the children were absent at the time of physical examination) and 359 were completed. This step was followed by designing an entry model using the software Statistical Package for Social Sciences (SPSS, version 11), then the coded questionnaire were entered into a personal computer by the researcher. Data cleaning was performed through checking out a random number of the questionnaires and through exploring descriptive statistics frequencies for all variables.

4.12 Data analysis

The researcher analyzed the data after several consultations with the supervisor; Appropriate statistical analytical techniques were performed. Frequency distribution tables were constructed for the schoolchildren features and for the distribution of various skin conditions. Chi-squared test was used in cross-tabulation analysis to test the significance of association between skin conditions and the qualitative variables.

The types of skin diseases among schoolchildren were described through frequency and cross tabulation. To determine if there is an association between the presence of skin diseases and other variables, chi-square (x^2), and P value at level < 0.05 was considered a statistically significant.

4.15 Eligibility criteria

Inclusion Criteria

All attending school children in the primary school in the 1st and 6th grades during diagnosis time included in the sample.

Exclusion Criteria

1. All school children who were absent during diagnosis time.
2. All children in the primary school in the 2ed to 5th grade during diagnosis time.

4.16 Ethical Matter

1. Approval of Helsinki Committee (annex 3).
2. A formal approval to run the study in governmental schools in Gaza Strip was taken from the Ministry of Education (Annex 4).
3. Every subject was given with the questionnaire an explanatory form about the study. This form contained the purpose of the researcher, confidentiality of the information and the participation is optional (annex 5).
4. Participants' names was not used anywhere, only serial numbers were used.
5. Information obtained were kept confidential and only made known to researchers, the supervisors and examiners.
6. For children suffering from skin disease, appropriate treatment were prescribed at

the time of examination.

4.15 Limitation of the study

The limitation were

- Lack of previous similar research in Palestine limited the study.
- Limitation of transportation between Gaza Strip Zones, due to the difficult political situation at the period of the data collection, led to exclude the Middle and south zones from the research due to the difficulty to visit them at the time of data collection.
- Seasonal variation and its effect on skin diseases, were not considered.

4.16 Classification of skin diseases

Skin diseases were classified according to the modified 10th revision of the international classification of disease (ICD-10) (Karen, 1998).

Chapter V

Results and discussion

This chapter presents the results of statistical analysis and the discussion of the data. Descriptive analysis presents the demographic characteristics, socioeconomic characteristics, and prevalence of skin diseases among subjects in three areas in Gaza strip (East of Gaza, West of Gaza, and North of Gaza).

This chapter formed from three parts:

1- Distribution of the study population
2- Prevalence of skin diseases
3- Relationships between skin diseases and the study variables

5.1 Distribution of the study population

A sample of 359 children included in this study showed different demographic profiles. Table (5.1) summarizes important variables that reported in this study, gender, age, and the child order among their brothers and sisters.

Table 5.1: Distribution of the study population by demographic variables

Variables	Frequency	Percentage %
1-sex		
Male	**161**	**44.8**
Female	**198**	**55.2**
2-Age		
Sixth grade	**211**	**58.8**
First grade	**148**	**41.2**
3-Order of child in the family		
1- 2	**118**	**32.9**
3 - 5	**145**	**40.4**
6 - 8	**71**	**19.8**
9 or More	**25**	**7.0**

5.1.1. Distribution of the study population by demographic variables:

5.1.1.1 Children's gender:

A total of 359 schoolchildren were took part to the study, female subjects were more than male subjects, they represented (55%), while the male subjects represented (45%) (Fig. 5.1).

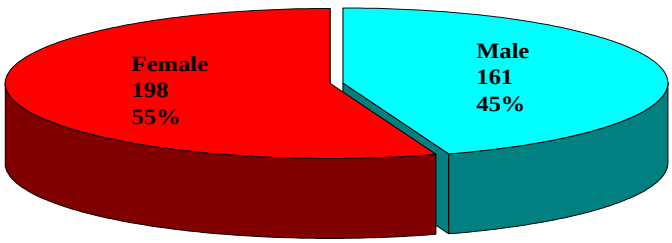


Figure 5.1: Distribution of schoolchildren by sex

5.1.1.2. Children's age:

In regarding of the age of subjects, schoolchildren in the six grade is more than in the first grade. They represented (58.8%), while the schoolchildren in the first grade represented (41.2%) (Fig. 5.2).

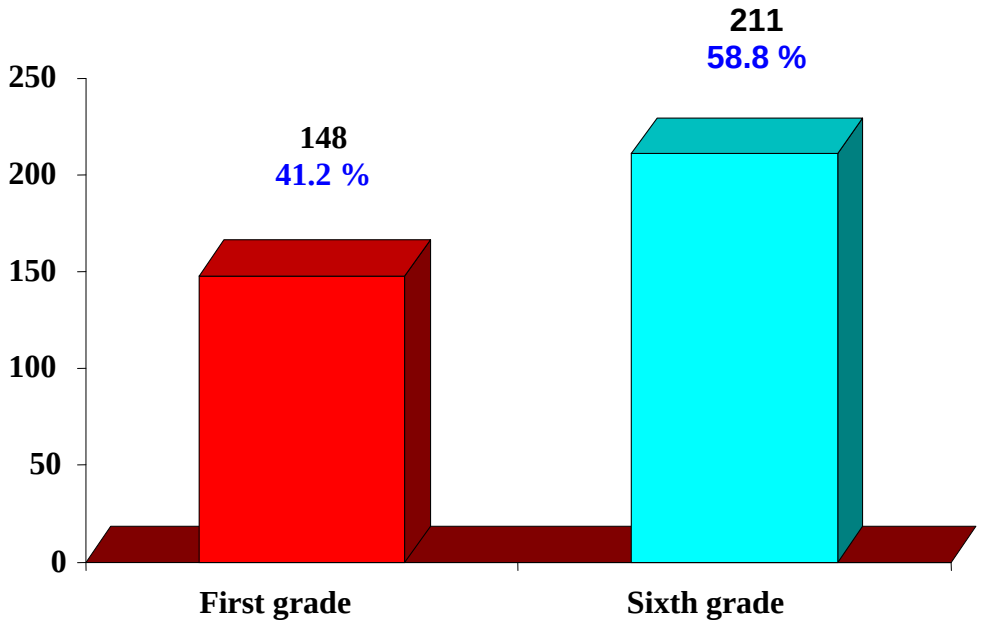


Figure 5.2: Distribution of schoolchildren according to their grades

5.1.1.3. The child order among their brothers and sisters:

The highest percentage of the order children (40.4%) was **three to five**, while (32.9%) of children were ordered **one to two,** 19.8 % were ordered of children were ordered **6-8** and in 7% of them the child order was **more than nine**. The mean child order was 4.17 with stander deviation $^{+}$- 2.79. The minimum order was one and the maximum order was 14 (Fig. 5.3).

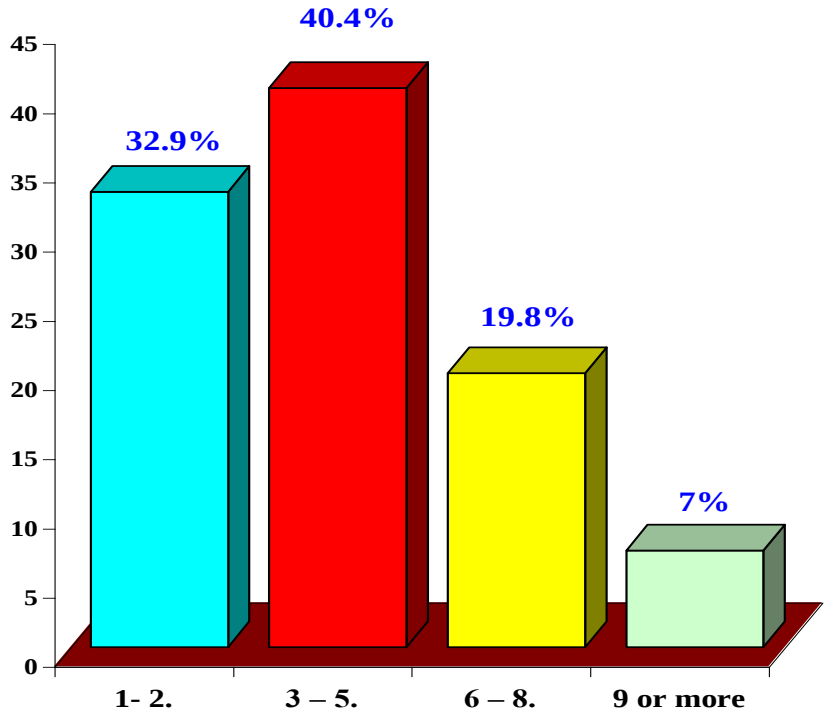


Figure 5.3: Distribution of the child order among their brothers and sisters

5.1.2. Socioeconomic status of schoolchildren:

This part of the analysis demonstrate distribution of the study population by locality, years of education for the parents, income of the family and occupation of both father and mother of the child. Below is a descriptive for the study population for these characteristics as shown in Table (5.2) and the attached groups.

Table 5.2: Socioeconomic characteristics of the study population

Variables	Frequency	Percentage %
1-Residency place		
East of Gaza	131	36
West of Gaza	76	21
North of Gaza	152	43
2-Father's occupation		
Unemployment	53	14.8
Worker	170	47.4
Merchant	32	8.9
Employee	104	29
3-Mother's occupation		
Private work	10	2.8
Housewife	329	91.6
Employee	20	5.6
4- Father's education level per year		
0 - 6	80	22.3
7 – 9	75	20.9
10 – 12	102	28.4
13 and more	102	28.4
5- Mother's education level per year		
0 - 6	66	18.4
7 – 9	124	34.5
10 – 12	129	35.9
13 and more	40	11.1

Variables	Frequency	Percentage %
1- Family income (NIS)		
< 1100	**85**	**55.2**
1100 - 2500	**45**	**34.4**
> 2500	**16**	**10.4**
2- Number of family member		
0 - 6	**77**	**21.5**
7 – 9	**144**	**48.5**
> 9	**108**	**30**

5.1.2.1. Distribution of the study population by residency place:

As shown in figure (5.4), the highest percentage of schoolchildren was from North of Gaza, which represent (43%), about (36%) of schoolchildren were from East of Gaza, while (21%) of them were from West of Gaza.

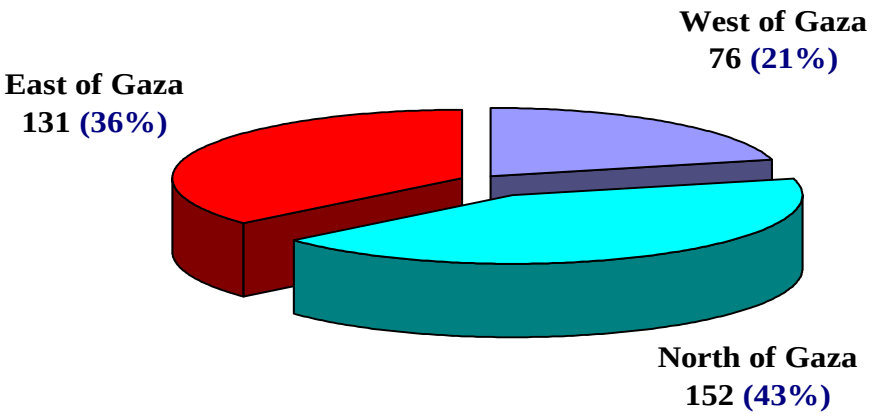


Figure 5.4: Distribution of schoolchildren by residency place

5.1.2.2. The occupation of parents:

5.1.2.2.1. Father's occupation:

Around half of the fathers (47.4 %) were workers, 29% of fathers were Employees, 8.9% of them were merchants, and the remainders fathers (14.8%) were unemployment (Fig.5.5).

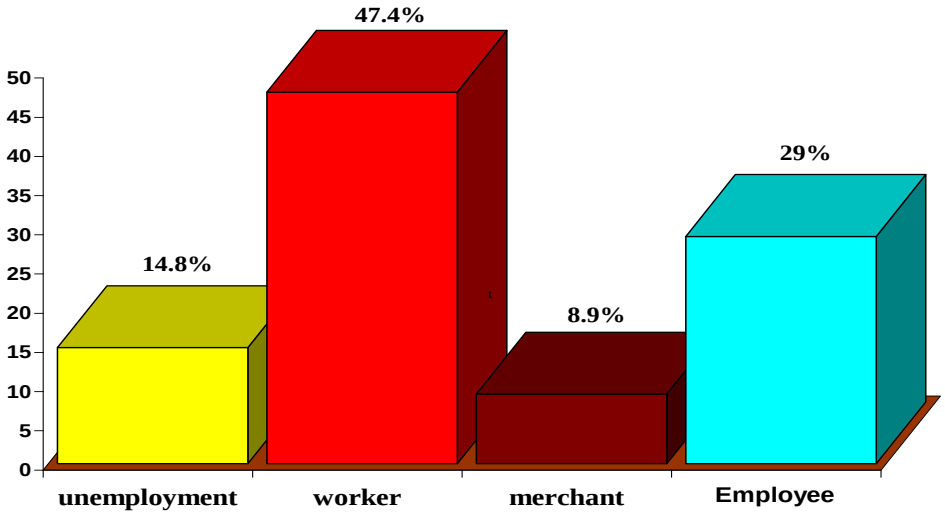


Figure 5.5: Distribution of fathers by occupation

The Palestinian Central Bureau of Statistics (PCBS) reported that the percentage of unemployment among males was 29.4 %. Therefore, it is may surprising to Say that only 14.85% in our study were unemployment. These results can be explained if we knew that this study did not estimate all unmarried males 15 years and over who did not work. And this can be explained by the fact the highest percentage of unemployment concentrated among the youth, the highest percentage registered for the age group 15-19 it reached 37.2% (34.0% in the West Bank compared with 45.1% in Gaza Strip) (PCBS, 2005),

5.1.2.2.2. Mother's occupation:

The results in the figure (5.6), reveals that the majority of mothers were mainly housewives (91.6%), 5.6% were employees and 2.8% have private work.

The unemployment percentage among fathers was lower in comparison to mothers, but it is high which (14.8%) of the fathers were not working, and that affects the economical situation of the Palestinian families.

Compared with The Palestinian Central Bureau of Statistics (PCBC), which reported that the participation rate of women in the labor force in year 2005 was estimated to 13.1%, the results in this study revealed that only 8.4 % of women participate in the labor force. The difference above can be explained when we knew that the study did not estimate the unmarried women over 15 years old.

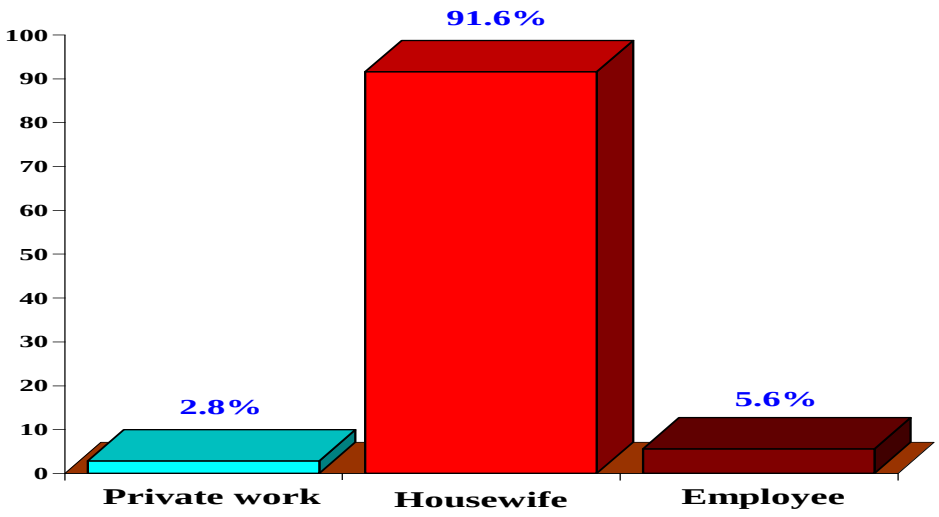


Figure 5.6: Distribution of mothers by occupation

5.1.2.3. Educational level of parents:

5.1.2.3.1. Educational level of mother:

Results showed 18.4% of mothers did not completed up to sixth grade, 34.5% between 7-9 grades, 35.9 up to 10-12 grades, and 11.1 had more than 13 years of education (Fig. 5.7).

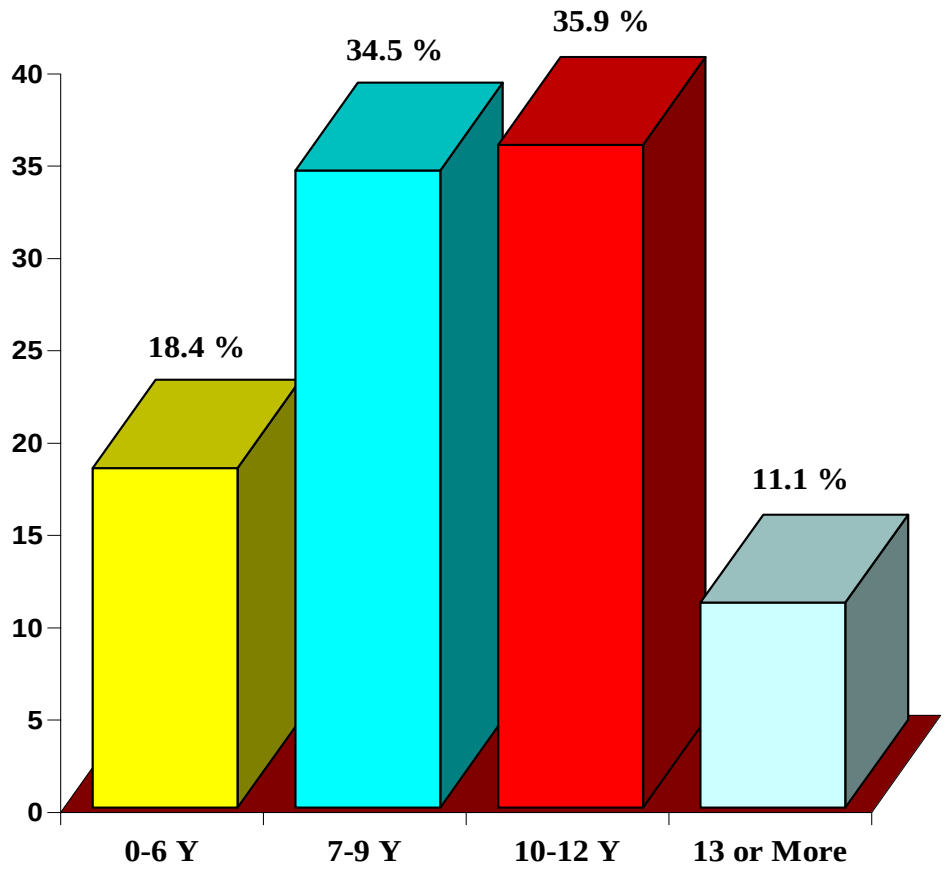


Figure 5.7: Percentage distribution of mothers by educational level

5.1.2.3.2. Educational level of father:

As illustrated in Figure (5.8), the percentage of fathers who finished **10-12** years of education (28.4%) is approximately equal to percentage of fathers who had more than **13** years of education, 20.9% between **7-9,** and 22.3% who had low level of education (0-6 years of education).

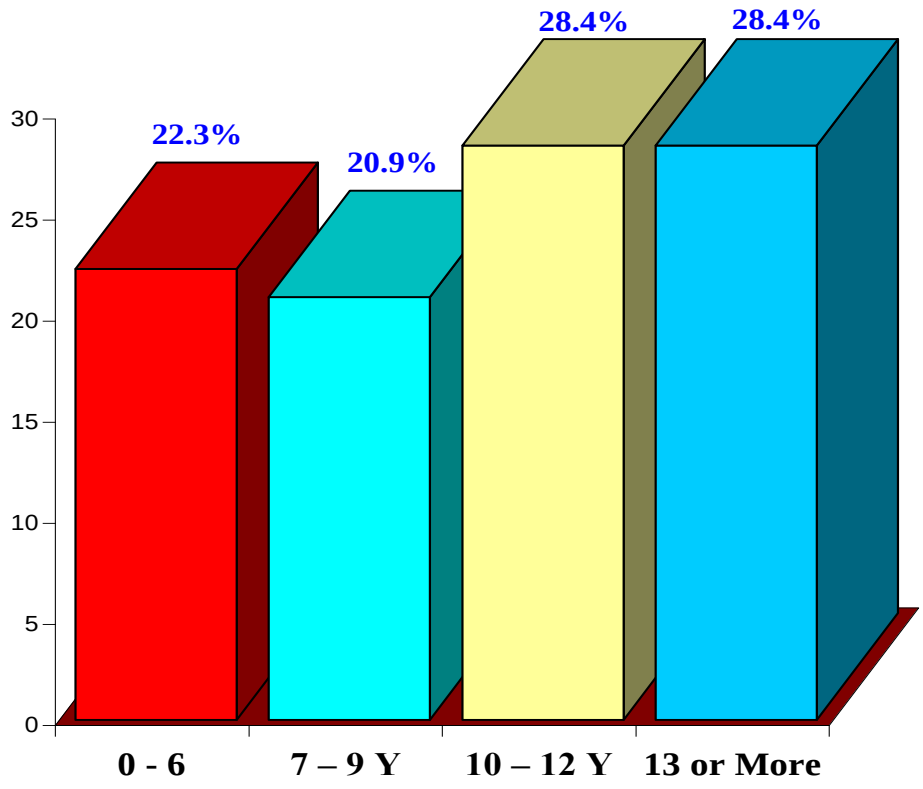


Figure 5.8: Percentage distribution of fathers by educational level

The researcher found in this study that, mothers with a medium educational level (seven to twelve years of education) were 70.4% and they were more than the fathers in the same level (49.3%) were. We can explain these results in regarding to the difficult economical situation that persuades many males to get out of the school to work and help their families, This may lead to higher percentage of females with a medium educational level (seven to twelve years of education) when compared to males. After that, females in this community get married early and become family care oriented, once they do that, they

have to leave studies. Thus, the percentage of males with a higher level of education (thirteen to eighteen years) become was higher than that among females in the same level.

5.1.2.4. Income:

The researcher classified incomes into three categories, low level > 1100 NIS, medium level 1100 – 2500 NS, and high level > 2500 NIS (The prevailing exchange rate at the time of the study was NIS 4.6: US $ 1.00).

Results revealed that 57.1 % of the families don't like to mention their exact income because it's sensitive issue, while 52.9% of the families accepted to mention their income, more than half of them (55.2 %) reported that their average monthly income was less than 1100 NIS, About one-third (34.4%) had income of (1100-2000), and only 10.4% of the families had income more than 2500 NIS (Table 5.3).

The present study has shown a high percentage of the families were classified in the low-income levels, this associated with the bad economical and political situation during data collection period and before that.

Table 5.3: Percentage distribution of children's families by income

Average Income Intervals (NIS)	Frequency	Percentage	* Valid Percentage
< 1100	**85**	**23.7 %**	**55.2 %**
1100 - 2500	**53**	**14.7 %**	**34.4 %**
> 2500	**16**	**4.5 %**	**10.4 %**
Don't know	**205**	**57.1 %**	

* Valid percentage were used after exclusion of those who respond (Don't know)

5.1.2.5. Number of family members:

As shown in the figure (5.9), around half of the families (48.5%) had **seven to nine** members (medium families), about (30.1%) of families had more than **10** persons in the family, and only (21.4%) of families in the study had **three to six** persons (small families).

The mean number of persons in the family was 8.60, with standard deviation $\pm$ 4.31 persons, the maximum number of person was 24 persons, and the minimum number was three persons.

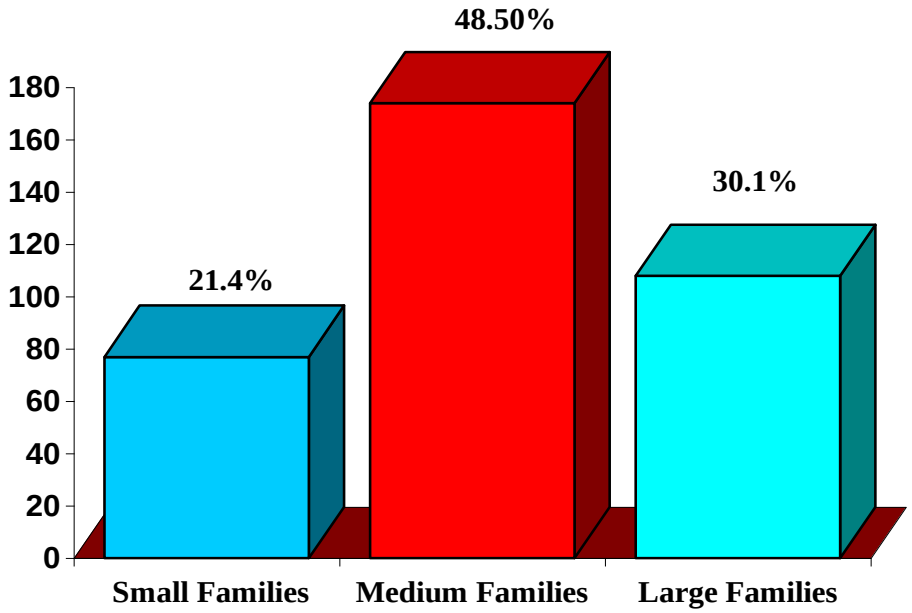


Figure 5.9: Distribution of families by number of family member

Like the rest of Arab countries, the Palestinian families like to have a large number of children. This study shows that a high percentage of families (78.6%) had more than six members, while only 21.4% had six members or less.

5.1.2.6. Status of building:

5.1.2.6.1. Type of building:

Most of the Families of children (62.4%) are living in independent building, while only (37.6%) of them are living in apartment in a building (Table 5.4).

5.1.2.6.2. Type of the construction:

As illustrate in Table (5.4), High percentage of children of the study (88.6%) are living in concrete houses, 7.5% of them are living metal sheets and the remainder children(3.7%) are living in asbestos houses and other types of constructions (.8%) .

Table 5.4: Distribution of the children's families according to the status of building

Status of building	Frequency	Percentage
1- Type of Building		
Apartment	**135**	**37.6**
Independent building	**224**	**62.4**
2- Property of building		
Property	**321**	**89.4**
Rent	**32**	**8.9**
UNRWA	**6**	**1.7**
3- Type of the construction		
Concrete	**318**	**88.6**
Metal sheets	**27**	**7.5**
Asbestos	**11**	**3.1**
Others	**3**	**.8**

5.1.2.6.3. Property of building:

Among the study sample population, Very few of the children were living in UNRWA Buildings (1.7 %), 8.9% of them were living in a rent buildings, but the most of them (89.4%) were living in a property building (Table 5.4).

5.2 Prevalence of skin diseases

In this part of the study, we demonstrate the most common skin diseases among schoolchildren in Gaza strip, prevalence of the diseases was calculated based on the positive clinical cases divided by number of pupils in the study.

5.2.1. Prevalence of skin diseases in the study populations:

The prevalence of skin diseases diagnosed in the study sample is given in table (5.5), about half of the study population (48.5%) had skin diseases, and the others (51.5%) were healthy.

Table 5.5: Prevalence of skin diseases among study population

Presence of skin diseases	Frequency	Percentage
Yes	174	48.5%
Non	185	51.5%

The point prevalence for presence of any cutaneous disorder in this study was 48.5%. There are only a few epidemiologic studies that have mentioned the point prevalence of skin diseases in school children. However, there is no such large body of epidemiologic

data reported for Gaza Strip. The health teams of Governmental schools have examined students in the 1st and 7th grades in Gaza strip (MOH, 2004); they found that the prevalence of skin diseases among schoolchildren was less than 2%.

These results contradict with the results of the researcher, and other studies, which done in the region. Some of these studies conducted in developing countries reported much higher figures. El Badawy (2000) estimated the prevalence of the commonest types of skin diseases among school students in Zagazig district, Egypt, where the overall prevalence was found to be 66.8%. In Assiut Governorate, Abdel-Hafez et al. (2003) showed that 86.93% of the studied population had one or more skin diseases.

The results of researcher were higher than that documented by Shakkouy (1999) who found that the overall prevalence of skin disorders in Jordan was 19.23%.

The prevalence rate of skin diseases and conditions among schoolchildren in this study was much higher than among children in Arab Golf. For example **Bahamdan** (1996) found that skin diseases affected 19.8% of the children in Abha (Saudi Arabia), **Mostafa** (1996) Found The prevalence rate of skin diseases in Asir was 25.7%, and **Gad** (1984) reported that the prevalence in Qatar was 27.3%.

The differences in the prevalence of skin disorders in the various countries may be attributable to the differences in age group and gender. In addition, it could be due to the variation in the methods of diagnosis. Environmental, socioeconomic factors and accessibility of appropriate medical care can also explain the differences in the prevalence.

5.2.2. Prevalence of identifiable skin conditions:

The prevalence rates of various skin disorders diagnosed in the study sample are given in Table (5.6). Pityriasis alba and pedoculosis lices had the highest prevalence rates of all skin disorders (23.5%, 9.5% respectively), followed by eczematous diseases (9.5%) and infectious diseases (4.2%), very few pupils (0.8%) had scabies.

Table 5.6: Prevalence of identifiable skin conditions

Presence of Skin Diseases	Freq	Percentage from all cases	Percentage from all children
Non	**185**	**---**	**51.5%**
Pityreasis Alba	**83**	**47.7%**	**23.1%**
Pediculosis Lices	**34**	**19.6%**	**9.5%**
Eczematous Diseases	**15**	**8.6%**	**4.2%**
Infectious Diseases	**13**	**7.4%**	**3.6%**
Scabies	**3**	**1.8%**	**.8%**
Others*	**26**	**14.9**	**7.2%**
Total	**359**	**100%**	**(100.0%)**

* Others diseases includes pigmentry patches, insect bites, drug eruptions, vitiligo, cheilosis, spares

Whilst it is true that less than 10 skin disease groups probably account for 70% of dermatological consultations, at least 1000 skin diseases have been recognized (Williams, 1997). According to Pareto's principle, even though an enormous range of disease/reaction

patterns characterizes dermatology, prevalence surveys suggest that the bulk of the skin diseases come from fewer than 10 categories (Juran, 1975).

The findings in this study reveal that more than 85% of the disorders can be grouped into fewer than six categories is important in designing training programs for medical teams involved in the delivery of primary health care services and the findings are useful in developing educational programs and primary health care policy in Gaza Strip.

In many developing countries, where malnutrition, overcrowding, and poor sanitation are prevalent, infections and ectoparasitic skin diseases such as pediculosis and scabies are common (Williams, 1998).

The current study has revealed that the top five skin disorders on the list (pityriasis alba, Pediculosis Lices, Eczematous Diseases , Infectious Diseases and Scabies) comprised 85.1% of the skin conditions encountered (Table 5.6) and **Pityreasis Alba** causes accounted for 47.7% of all cases and **Pediculosis Lices** causes accounted for 19.6%.
The prevalence rate of pediculosis in the present study was higher than rates recorded in some developed countries (Estrada and Morris, 2000).

The results in this study reveals that the point prevalence of eczemas/dermatitis in school children was 6.5%, this figure is comparatively much lower than which reported in Western countries range between 11.4 and 22.3% (Juran, 1975). Eczemas, including atopic dermatitis, have a higher prevalence in developed countries, being influenced by socioeconomic and environmental factors such as excessive hygiene, carpets, and central heating (Williams, 1998).

5.2.3. Prevalence of one and more skin conditions in the study populations:

The overall point prevalence for presence of any cutaneous disorder in this study was 48.5%. Of those studied, 137 children (38.2%) had only one skin disease and 37 (10.3%) had two or more identifiable / apparent skin conditions Table (5.7).

Table 5.7: Prevalence of one and more skin conditions

Presence of Skin Diseases	Freq	Percentage
Non	**185**	**51.5%**
Only one skin disease	**137**	**38.2%**
Two or more skin diseases	**37**	**10.3%**
Total	**359**	**100%**

This study shows that skin conditions are common in children and about half of them were affected at any given time. Further more that, around one-tenth of children suffer from more than one skin disease and they need more attention. Unexpectedly only 16 pupils (4.4%) reported that they are infected by skin diseases, That means pupils need more information about skin diseases

5.3 Distribution of the skin diseases and the study variables

5.3.1. Distribution of the skin diseases by Demographic status:

In this study, the researcher examined the relationship between the demographics variables

of the subjects and the presence of skin diseases. The following details were recorded for each child: sex, age, and residence of child.

5.3.1.1. Sex of child:

Table (5.8) shows that the overall point prevalence of one or more identifiable skin conditions was 48.5% of those studied, The prevalence of skin diseases are higher among males (55.9%) than females (42.8%), The differences between males and females are statistically significant (P = 0.01%).

Table 5.8: Presence of skin diseases by sex of pupil

Presence of disease	Sex of pupil				Total	
	Male		Female			
	Freq	%	Freq	%	Freq	%
Yes	90	55.9%	84	42.4%	174	48.5%
No	71	44.1%	114	57.6%	185	51.5%
Total	161	100.0%	198	100.0%	359	100.0%

$X^2 = 6.45$ P = 0.011

In order to estimate the burden and relative frequency of dermatological disease in children in the community, we measured the point prevalence of skin conditions in 359 schoolchildren. The prevalence of skin diseases was 48.5%, with the prevalence for males being higher than for females, the Odds Ratio (OR) was 1.7 for males, in comparison with females.

5.3.1.2. Prevalence of identifiable skin conditions by sex:

The prevalence rates of various skin disorders diagnosed in the study sample are given in Table (5.9). Pityriasis alba and pedoculosis lices had the highest prevalence rates of all skin disorders (23.5%, 9.5% respectively). Males had a higher frequency of Pityriasis alba (34.8%) than did females (13.6%), But females had a higher frequently of head lices (16.2%) than did males (1.2%). Other diagnoses were eczematous diseases 4.2 % followed by infectious diseases (3.6%) and scabies (0.8 %). Others diseases includes pigmentary patches, insect bites, drug eruptions, vitiligo, cheilosis, spares hair etc. were 7.2 %. There is a strong significant differences in presence of Pityriasis alba and pediculosis lices among males and females (p = 0.001).

Table 5.9: Distribution of different skin diseases by sex of pupil

Presence of Skin Diseases	Sex of Pupil				Total		P value
	Male		Female				
	Freq	%	Freq	%	Freq	%	
Non	71	44.1%	114	57.6%	185	51.5%	___
Pityriasis Alba	56	34.8%	27	13.6%	83	23.1%	0.000
Pediculosis Lices	2	1.2%	32	16.2%	34	9.5%	0.000
Eczematous Diseases	9	5.6%	6	3.0%	15	4.2%	0.345
Infectious Diseases	6	3.7%	7	3.5%	13	3.6%	0.923
Scabies	3	1.9%	0	0.0%	3	.8%	0.54
*Others	14	8.7%	12	6.1%	26	7.2%	0.338
Total	161	100%	198	100 %	359	100.0%	___

* Others diseases includes pigmentry patches, insect bites, drug eruptions, vitiligo, cheilosis, spares

The results reveal that, Pityriasis alba is a common disease in Gaza strip, It exists in male around 2.5 times more than females. Lin and Janniger (2005) conducted recent studies, which have found direct correlations between the incidence of Pityriasis alba amount of sun exposure. In regarding these studies, this variation in prevalence may be attributed to excessive dry skin due to over exposure to sunlight as males are more exposed to sunlight during outdoor play.

The prevalence of pityriasis alba among males (34.8%) in this study was higher than that reported in schoolboys in Riyadh (11.3%) (Al-Khawajah, 1997).

Human lice (head and body) are among the arthropod-ectoparasites of worldwide distribution; this study appears that Pediculosis Lices is a major problem. This can be attributed to poor hygienic and sanitary conditions, lack of awareness and poor health services. Girls are more affected (16.2%) as compared to boys (1.2%). The reason for this is that most of the girls keep long hair and do not wash them so frequently.

Morsy et al (2001) reported similar sex differences in Egypt for Pediculosis Lices, they indicated that lice (mainly the head louse) are still a public health problem particularly among female students in the primary and preparatory schools.

Pediculosis is a public health issue in the Middle East. In Amman, a prevalence of 14.5% was reported among school girls (Amr, 2000), in Lebanon it was 8% (Saab, 1996), while it was 88.1% in Libyan (Bharja, 1988) and 30.3% in Egyptian schoolgirls (Morsy, 2001).

The relatively high prevalence rate of pediculosis in the current study may be attributed to the absence of effective screening program in schools. Another reason could be due to the timing of the study, which was conducted in summer. Pediculosis is more frequent in the warmer months when the higher temperature assist in egg laying, hatching, and the spread

of the infection (Mimouni, 2002). The variability of the prevalence among the countries could be due to the differences in the practice of hygiene, socioeconomic status, overcrowding in the school, and differences in age and gender involved in the various studies.

It appears that certain skin diseases (Pityriasis Alba and Pediculosis Lices) are an important health problem for the population of the Gaza strip.

5.3.1.2. Prevalence of skin conditions by Age of child:

The prevalence of skin diseases is higher among schoolchildren in six grade (52.1%) than in the first grade (43.2%). The differences between the two grades did not reach the statistical significant level (P = .097) (Table 5.10).

Table 5.10: Distribution of skin diseases according to grade of pupil

Presence of skin disease	Grade of pupil				Total	
	Sixth grade		First grade			
	Freq	%	Freq	%	Freq	%
Yes	110	52.1%	64	43.2%	174	48.5%
No	101	47.9%	84	56.8%	185	51.5%
Total	211	100.0%	148	100.0%	359	100.0%

x^2=2.752 P = 0.097

As shown in Table (5.11), In spite of the absence of differences between the two grades, looking for specific diseases, Results indicated that the prevalence of pediculosis lices in schoolchildren in the sixth grade (14.7%) is higher than the first grade (2.0%) (P< 0.001).

Table 5.11: Distribution of Pediculosis lices by grade of pupil

Pediculosis lices	Grade of pupil				Total	
	Sixth grade		First grade			
	Freq	%	Freq	%	Freq	%
Yes	31	14.7%	3	2.0%	34	9.5%
No	180	85.3%	145	98.0%	325	90.5%
Total	211	100.0%	148	100.0%	359	100.0%

x^2=17.543 P < 0.001

Unexpectedly, the present study showed that children in first grade exhibited a significantly lower prevalence rate than those in the six grade. Kokturk, (2003) reported similar results; they found that children aged 8-9 years exhibited a significantly lower prevalence rate than those aged 10-11 years.

These results may be explained in regarding that the mothers take care more to younger children than take care the olders, the mothers think that the elder children had become more responsible and they capable to depend on them self in washing.

5.3.1.3. Distribution of skin diseases and child order:

There was a very small difference in having skin diseases with respect to child orders as shown in table (5.12). The differences between the groups did not reach a statistical significant level (P = 0.769).

Table 5.12: Distributions of skin diseases and child order

Presence of disease	Category of order				Total	
	1 – 5		More 6th			
	Freq	%	Freq	%	Freq	%
Yes	127	48.2	47	48.9	174	48.5
No	136	51.8	49	51.1	185	51.5
Total	263	100.0	96	100.0	359	100.0

$X^2 = 1.132$ P value 0.769

5.3.2. Distribution of the skin diseases by socio-economic status in schoolchildren:

Many skin diseases in developing countries are associated with socioeconomic factors. It is generally agreed that a public health approach to dermatology in this setting is particularly appropriate; but there has been little epidemiologic research done to examine which particular socioeconomic factors are important determinants of the prevalence of skin diseases. This is especially true Gaza strip. The following details were recorded for each child: monthly income, family size and parents' education.

5.3.2.1. Residency place:

Table (5.13) shows that around half of the study population (48.5%) are suffering from óat least one skin disease. The table demonstrates differences between the three study localities. The high percentage is reported in East of Gaza (53.4%), followed by North of Gaza (51.3%) with marked difference between the two localities and West of Gaza where the presence of skin disease is the lowest (34.2 %). The variation among different areas is significant (p =0.019).

Table 5.13: Distribution of the skin diseases by area

Presence of disease	Area						Total	Total
	West of Gaza		North of Gaza		East of Gaza			
	Freq	%	Freq	%	Freq	%	Freq	%
Yes	26	34.2%	78	51.3%	70	53.4%	174	48.5
No	50	65.8%	74	48.7%	61	46.6%	185	51.5
Total	76	100.0%	152	100.0%	131	100.0%	359	100

X^2= 7.973 (p =0.019)

In this study, skin diseases were significantly more common in rural areas (North of Gaza) than in the urban area (West of Gaza). Wu et al. (2000) reported similar finding, they found that the prevalence of most skin infections and infestations are much higher in the rural County than in the city.

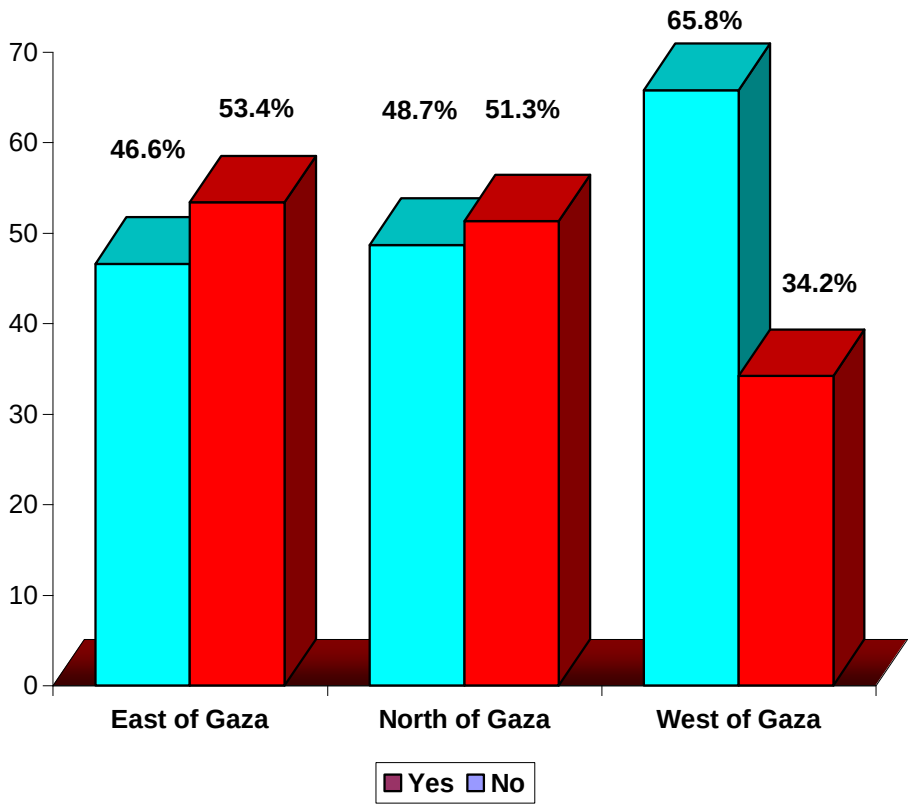


Figure 5.10: Distribution of the skin diseases by area

5.3.2.2. Level of family income:

As illustrated in Table (5.14) no difference was found in the relationship between the presence of skin disease and the level of family income, where the prevalence of skin disease among children come from families with average income of < 1000 is attend to be equal among children come from families with average income of > 1100 (52.9%, 55% respectively). The difference between two groups is not reached statistical significant level (P = 0.568).

Table 5.14: Distribution of skin diseases disease and income

Presence of skin disease	Income intervals					
	0 - 1000		> 1100		Total	
	Freq	%	Freq	%	Freq	%
Yes	45	52.9 %	38	55 %	83	53.9%
No	40	47.1 %	31	45 %	71	46.1%
Total	85	100.0%	69	100.0%	154	100.0%

$X^2 = 0.070$ P value = 0.792

In this study the income of the family did not play important role in affecting the skin diseases, similar results was found in Tanzania by **Gibbs (1996),** He found that poverty (e.g., no regular cash income) did not correlate with the prevalence of skin disease **.**

These results can be explained by the availability and accessibility of free health services (UNRWA and NGOs centers), and all people can obtain health services (especially primary health care) disregarding their poverty. The association between skin disease rates and family income was not statistically significant (P value = 0.568).

5.3.2.3. Number of family members:

The researcher classified the number of family into two categories, relatively small family (zero to six persons in the family) and relatively large family (more than 7 persons in the family). The results in Table (5.15) indicate that there was no difference in size of the family and having skin diseases. 48.1%, 48.5% among children who came from small families and large families respectively had skin diseases. The variation between two groups did not reach a statistical significant level (p = 0.82).

Table 5.15: Distribution of skin diseases by number of family members

presence of disease	Number of family members				Total	
	0 - 6		> 7			
	Freq	%	Freq	%	Freq	%
yes	37	48.1 %	137	48.5 %	174	48.5%
no	40	51.9 %	145	51.5 %	185	51.5%
Total	77	100 %	282	100 %	359	100 %

X^2 = .921 P value = 0.82

5.3.2.4. Distribution of skin diseases and Fathers years of education:

Figure (5.11) shows that, the prevalence of skin diseases among children of fathers that had 0 - 6 years of education was 48.8%, with small differences with the followed two groups of educational level 7-9 and 10-12 years of education, they were 56 %, 52% respectively. The prevalence dropped to 39.2% among children with fathers who had more than 13 years of education. The association between skin disease rates and fathers years of education was not statistically significant (P value = 0.127).

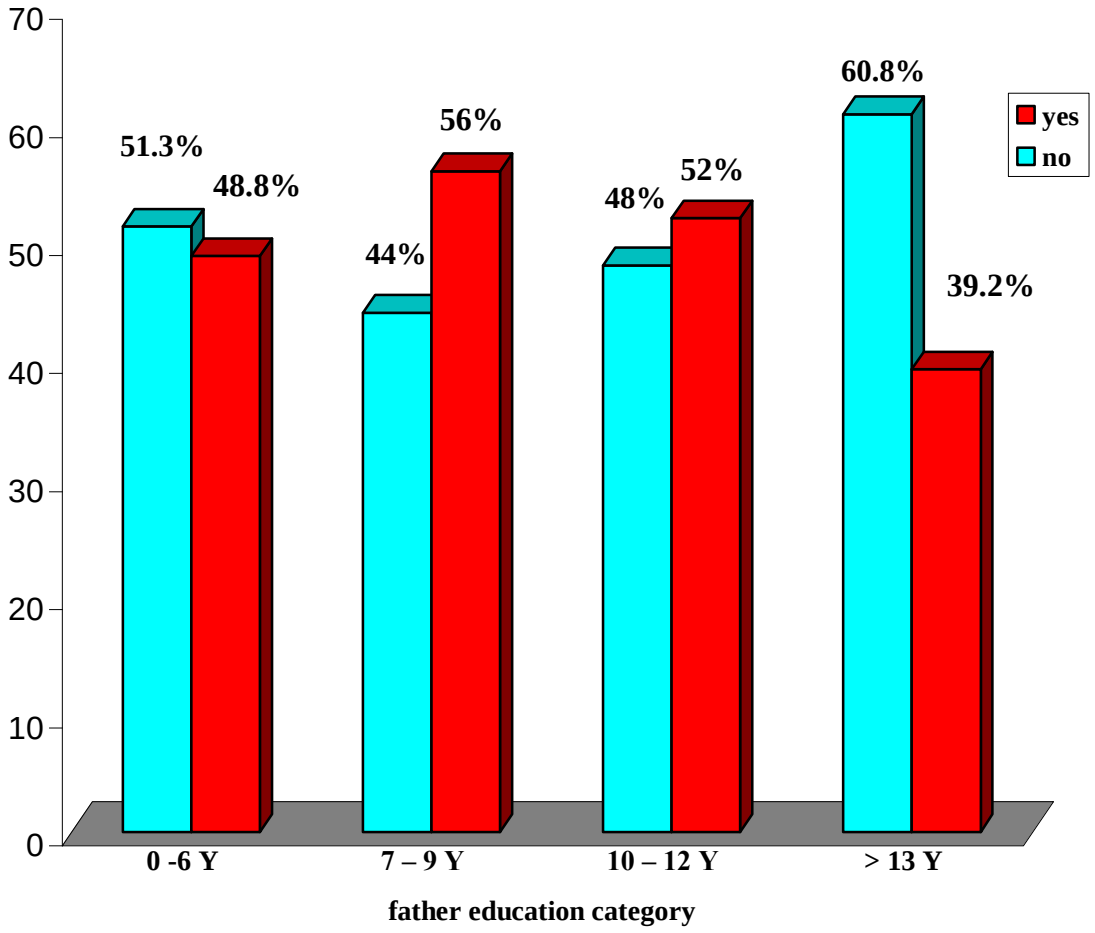


Figure 5.11: Distribution of skin diseases by father education level

In addition, this study demonstrated that the prevalence of skin diseases did not determine by some socioeconomic factors such as fathers years of education, family income and number of family.

5.3.2.5. Distribution of skin diseases and mothers years of education:

The results in the table (5.16) reveal that the prevalence of skin diseases in schoolchildren was gradually decreasing with the number of education years of their mothers**.** The highest percentage of prevalence of skin diseases (65 %) is among children of mothers that had 0-6 years of education, followed by 7-9 years of education (49.2%) and 10-12 years of education (44.12%). The lowest prevalence (32.5%) is among children of mothers that had

high education (more than 13 years). There is a significant decrease in the prevalence of skin diseases relative to increase years of education attained of mothers. Significant difference was found between groups.

Table 5.16: Distribution of skin diseases by mother education category

presence of disease	mother education category							
	0 - 6		7 – 9		10 - 12		13 0r more	
	Freq	%	Freq	%	Freq	%	Freq	%
yes	43	65.2%	61	49.2%	57	44.2%	13	32.5%
no	23	34.8%	63	50.8%	72	55.8%	27	67.5%
Total	66	100.0%	124	100.0%	129	100.0%	40	100.%

X^2= 12.4 (P = 0.006)

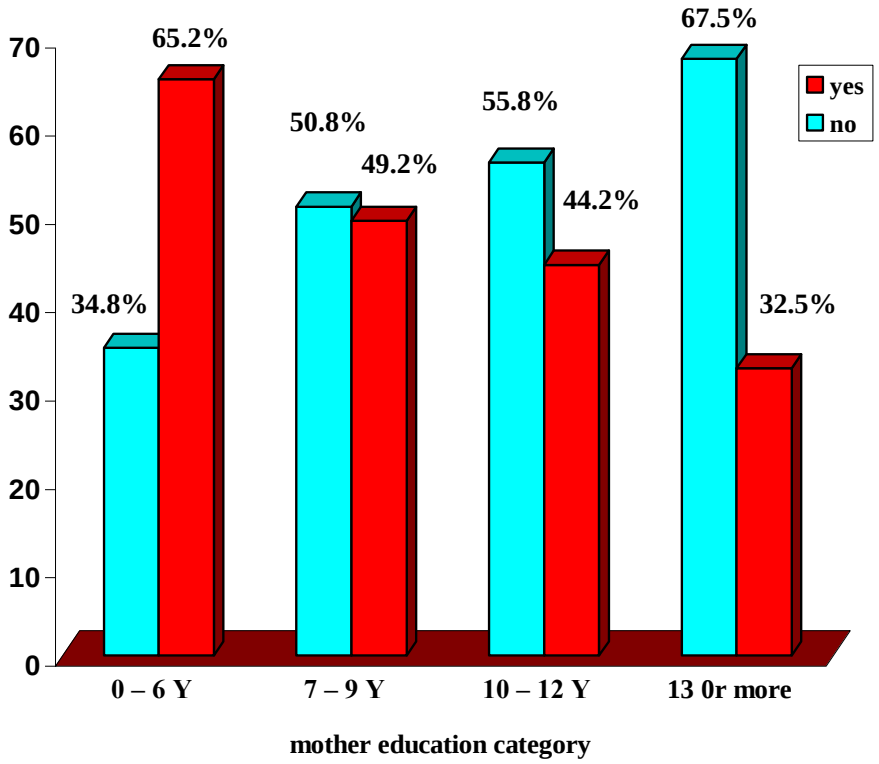


Figure 5.12: Distribution of skin diseases by mother education category

5.3.2.6. Distribution of skin diseases and presence of animals and insects:

5.3.2.6.1. Distribution of skin diseases and presence of mice in house:

The Results in Table (5.17) showed that 48.2 % of the study population reported the presence of mice in their houses, approximately half of those (50.8%) had skin diseases, but for children who reported that they have not mice in their houses, only 46.2% had skin diseases. The difference between the two groups did not reach a statistical significant level (p = 0.380).

Table 5.17: Distribution of skin diseases and presence of mice, insects, and animals

Variables	Presence of skin diseases				Total		X^2	P- value
	Yes		No					
	Freq	%	Freq	%	Freq	%		
1- Mice in the house								
Yes	88	50.8	85	49.1	173	48.2	0.796	0.380
No	86	46.2	100	53.8	186	51.8		
2- Insects in the house								
Yes	116	49.5	118	50.5	234	65.2	.328	0.567
No	58	46.4	67	53.6	125	34.8		
3- Animals or birds in the house								
Yes	85	55.9	67	44.1	152	42.3	5.863	0.015
No	89	42.9	118	57.1	207	57.7		

5.3.2.6.2. Distribution of skin diseases and presence of insects:

Around two third (65.2%) of children reported the presence of insects in their houses, about half of them (49.5%) suffer from skin diseases, while only 46.4% of children whose their houses were free from insects had skin diseases. These variations between the groups did not reach a statistical significant level (p =0.328) (Table 5.16).

5.3.2.6.3. Distribution of skin diseases by presence of birds and animals:

Table (5.16) shows that 42.3% of the study population has animals or birds in their houses, there is marked difference between children who have animals or birds with children who have not, 55.9% of the first group had skin diseases, but only 42.9% from the other group had skin diseases. Statistical significant difference was found between groups (P=0.015).

5.3.2.7. Distribution of skin diseases and sanitation:

5.3.2.7.1. Source of drinking water:

The results in Table (5.18) shows that the highest percentage (55.9%) from the children who use the municipality water for drinking had skin diseases, while 49.2% from who use water from tanks had skin diseases, but only 35.6% from children who use filters were diseased. The variation among different groups is significant (p =.019).

5.3.2.7.2. Breaking of water in the last two weeks:

Among the study population 36.4% reported that water discontinued in the last two weeks, more half of them (51.9 %) suffer from skin diseases, while only 46.5% was diseased among children who reported having water without break. The differences between the groups did not reach a statistical significant level (P = 0.323) (Table 5.18).

5.3.2.7.3. Availability of clean water:

As shown in Table (5.18), more than one-third of the study population (37%) reported that the water in their houses was not clean, 44.4% of them were diseased, while 50.9% of children who reported that water was not clean were diseased**.** The variation among different groups did not reached a statistical significant level (p =0.232).

Table 5.18: Distribution of skin diseases and availability of water

Variables	Presence of skin diseases				Total		X^2	P-value
	Yes		No					
	Freq	%	Freq	%	Freq	%		
1- Source of drinking water								
Municipality	80	55.9	63	44.1	143	39.8	9.908	0.019*
Filter	31	35.3	57	64.7	88	24.5		
Tanks of Cars	63	49.2	65	50.8	128	35.7		
2- break of water in the last two weeks								
Yes	68	51.9	63	48.1	131	36.5	0.978	0.323
No	106	46.5	122	53.5	228	63.5		
3- Clean Water								
Yes	59	44.4	74	55.6	133	37.1	1.427	0.232
No	115	50.9	111	49.1	226	62.9		

* The variation among different groups is statistically significant ($p < 0.05$).

5.3.2.7.4. Distribution of skin diseases according to the sewage and type of WC:

As shown in Table (5.18), 28.4% of reported that they use Turkish WC, of those only 39.2% were diseased. While the high percentage of children (41.2%) use the two types of WC, the results that half of them were diseased (50%). In addition, 30.4 % of children use

only the Turkish WC, of those 55% was diseased. The variation among different groups is statistically significant (p =0.022).

Further analysis by linear trend showed that there were obvious relationship between the type of WC and having skin disease, and using foreign WC is more safety than Turkish WC. This may be because the type of WC reflects the socioeconomic factors and the style of living or the Foreign WC is healthier.

Table 5.19: Distribution of skin diseases and Type of WC and sewage

Variables	Presence of skin diseases						odds Ratio	P-value
	Yes		No		TOTAL			
	Freq	%	Freq	%	Freq	%		
1- Type of WC								
Foreign	40	39.2	62	60.8	102	28.4	1*	0.022
Turkish and foreign	74	50.0	74	50.0	148	41.2	1.55*	
Turkish	60	55.0	49	45.0	109	30.4	1.90*	
2- Sewage								
Public sewage	155	47.1	174	52.9	329	91.6	1*	0.179
Pit	9	56.2	7	43.8	16	4.5	1.44*	
Open sewage	10	71.4	4	28.6	14	3.9	2.81*	

*Analysis by linear trend

The results in Table (5.19) shows that the majority of families have public sewage (91.6), only 47.1% of them were diseased, this percentage is lower than which found in the children who use open sewage or pits (74.1% and 56.2% respectively). The differences between the groups did not reach a statistical significant level (P = 0.167).

5.3.2.8. Distribution of skin diseases and hygiene practice:

5.3.2.8.1. Distribution of skin diseases and times of bathing:

Unexpectedly, as shown in table (5.20), a highest prevalence rate of skin diseases (53.2%) was found in the children who reported that they take bathing daily, followed by children bathing only one time in a week (50.7%). Finally the prevalence rate was (47.3%) in children who bathing two to three times in a week**.** The variation among different groups did not reached a statistical significant level (p =0.569)**.**

The results may be explained in regarding that the times of bathing is sensitive issue and the children may did not say the verity.

5.3.2.8.2. Distribution of skin diseases and sharing combs with others:

The results in table (5.20) show that approximately half of children (51.9%) who share comps with others were diseased, while only 35.1% of children who don't share combs were diseased. The association between skin disease rates and sharing combs with others was statistically significant (P value = 0.010).

5.3.2.8.3. Distribution of skin diseases and sharing towels with others:

Table (5.20) shows that around half of children (51.2%) who share towels with others were diseased, this percentage is more than which were found among children who don't share towels with others (42.5%). The difference between groups did not reach a statistical significant level (p = 0.124).

5.3.2.8.4. Distribution of skin diseases and sharing covers with others:

The researcher found that the prevalence of skin diseases in children who share covers (51.5%) with others is more than which it was found among children who don't share covers (45.8%).The variation among different groups did not reached a statistical significant level (p =0.284) (Table 5.20).

5.3.2.8.5. Distribution of skin diseases and sharing beds with others:

Table (5.20) shows that the prevalence of skin diseases among children who share beds with others (52%) is more than which was found among children who don't share beds with others (46.6%). The difference between groups did not reach a statistical significant level (p=0.326).

5.3.2.8.6. Distribution of skin diseases and sharing clothes with others:

The results in table (5.20) showed that the prevalence of skin diseases among children who share clothes with others (53.3%) is more than which was found among children who don't share clothes with others (46 %). The difference between groups did not reach a statistical significant level (p=0.191).

5.3.2.8.7. Distribution of skin diseases and sharing socks with others:

The researcher found that the prevalence of skin diseases in children who share socks with others (50%) is more than which it was found among children who don't share socks (47%).The variation among different groups did not reached a statistical significant level (p =0.646) (Table 5.20).

Table 5.20: Distribution of skin diseases and hygiene practice:

Variables	Presence of skin diseases				X^2	P-value
	Yes		No			
	Freq	%	Freq	%		
1- Times of bathing in a week						
Daily	25	53.2	22	46.8	2.936	0.569
2-3 times	113	47.3	126	52.7		
Once or more	37	50.7	36	49.6		
2- Sharing combs with others						
Yes	148	51.9	137	48.1	6.634	0.010*
No	26	35.1	48	64.9		
3- Sharing towels with others						
Yes	126	51.2	120	48.8	2.369	0.124
No	48	42.5	65	57.5		
4- Sharing covers with others						
Yes	85.0	51.5	81	48.3	1.047	0.284
No	88.0	45.8	104	54.2		
5- Sharing beds with others						
Yes	66	52.0	61	48.0	0.964	0.326
No	108	46.6	124	53.4		
6- Sharing clothes with others						
Yes	65	53.3	57	46.7	1.712	0.191
No	109	46.0	128	54.0		
7- Sharing socks with others						
Yes	69	50.0	69	50.0	0.211	0.646
No	105	47.5	116	52.5		

* The variation among different groups is statistically significant ($p < 0.05$).

The adoption of hygiene practices is influenced to some degree by social, lifestyle, and environmental factors. Results show that hygiene-related practices such as sharing combs, towels, covers, beds, clothes and socks with others are keys to preventing infections**.**

5.3.2.9. Distribution of skin diseases and the site of house:

5.3.2.9.1. House near an industry:

The results showed that 54.2% of children who live near an industry were diseased, while only 47.5% from children who do not live near an industry were diseased. The variation among different groups did not reached a statistical significant level (p =0.396) (Table 5.21).

5.3.2.9.2. House near a main street:

Table (5.21) shows that only 43.1% of children who live near a main street were diseased, this percentage is less than which fond in the children who don't live near a main street (54.4%). The variation among different groups is statistically significant (p =0.032)

5.3.2.9.3. House near a sandy road:

As shown in table (5.21), A high percentage of children (55.4%) from children who live near a sandy road were diseased, while only 42.4 % of children who don't live near a sandy road were diseased. The association between skin disease rates and living near a sandy road was statistically significant (P value = 0.014).

Table 5.21: Distribution of skin diseases and the site of house

Variables	Presence of skin diseases				X^2	P- value
	Yes		No			
	Freq	%	Freq	%		
house near an industry						
Yes	26	54.2	22	45.8	0.720	0.396
No	148	47.5	163	52.5		
House near main street						
Yes	81	43.1	107	56.9	4.579	0.032
No	93	54.4	78	45.6		
House near sandy road						
Yes	39	55.4	75	44.6	6.000	0.014*
No	81	42.4	110	57.6		

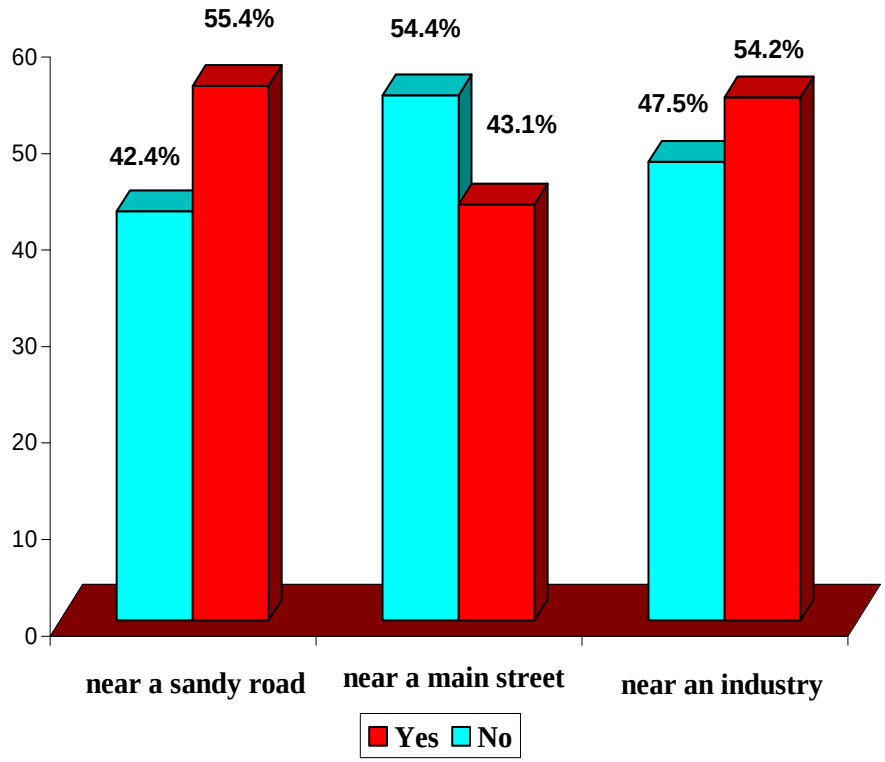


Figure 5.13: Distribution of diseased children and the site of house

5.3.2.10. Distribution of skin diseases and number of rooms in house:

The results in table (5.22) showed that a high percentage (53.2%) of children who live in small houses (one to two rooms) were diseased, and less than this percentage (47.4%) was found in the children who live in houses which contain three to four rooms. The lowest percentage of diseased children (31.3%) was found in children who live in big houses (five rooms or more). The difference between groups did not reach a statistical significant level ($p = 0.225$).

Table 5.22: Presence of skin diseases and number of rooms in house

Presence of skin disease	Number of rooms in house						Total	
	1 – 2		3 – 4		5 or More			
	Freq	%	Freq	%	Freq	%	Freq	%
Yes	58	53.2%	111	47.4%	5	31.3%	174	48.5%
No	51	46.8%	123	52.6%	11	68.8%	185	51.5%
Total	109	100.0%	234	100.0%	16	100.0%	359	100.0%

$X^2 = 2.981$ P value = 0.225

5.3.2.11. Distribution of skin diseases according building:

Regarding the type of building, the results in table (5.23) shows that more than half of children (51.8%) who live in an independent building were diseased, while only 43.0% of children who live in apartment were disease. The differences between the groups did not

reach a statistical significant level (P = 0.105).

The results in table (5.23) reveal that that the rate of skin diseases among the children who live in rent houses (57.9%) is higher than the rate that which found in the children who live in their proper house. The difference between groups did not reach a statistical significant level (p = 0.061).

Table 5.23: Distribution of skin diseases according building

Status of building	Presence of skin diseases				X^2	P value
	Yes		No			
	Freq	%	Freq	%		
1- Type of Building						
Apartment	58	43.0	77	57.0	2.625	0.105
Independent building	116	51.8	108	48.2		
2- Property of building						
Property	152	47.4	169	52.6	1.732	0.061
Rent	22	57.9	16	42.1		
3- Type of the construction						
Concrete	153	48.1	165	51.9	4.137	0.247
Metal sheets	16	59.3	11	40.7		
Asbestos	5	45.4	6	54.6		

Regarding the type of construction, results in table (5.22) reveal that a higher percentage of diseased children (59.3%) were found in the children who live in metal sheets, followed by children who live in concrete buildings (48.1%), unexpectedly, the lowest percentage was

found in children who live in asbestoses houses. The variation among different groups did not reached a statistical significant level ($p = 0.246$).

Chapter VI

Conclusion & recommendations

6.1. Conclusion

While skin diseases are very common among the populations in many developing countries, they have not been regarded as a significant problem that could benefit from public health measures. Indeed, more attention is frequently given to some less common health problems in the same countries. This attitude is due to the assumption that skin diseases are a benign, not life-threatening minor nuisance, and that they do not merit measures that may appear out of proportion to their low priority. However, at least in some countries, there seems to be a high demand by patients and healthcare workers for more consideration to be given to skin diseases. Children are particularly vulnerable to these disorders, including the more severe ones and their complications.

Virtually a little is known about the prevalence of skin conditions in children in the general population in Gaza Strip. Although we know something about the relative frequency of skin conditions seen by dermatologists, we do not know how such referrals are influenced by factors such as demographic and socioeconomic situation, Hygiene practice, educational and cultural background. In this study, the researcher determined the prevalence of skin diseases among school students in Gaza strip. The main objective of this study was to determine the prevalence of skin diseases, and examined the various factors that might be associated with its occurrence. The researcher used cross-sectional design and a multistage stratified random sampling technique with proportional allocation for this study.

We measured the point prevalence of skin conditions in 359 schoolchildren from the first and six grades in primary schools, using the British Association of Dermatologists diagnostic index. This study showed that skin conditions are very common in children and about half of them (48.5%) are affected. The prevalence of skin diseases is higher among males (55.9%) than females (42.8%), the differences between males and females are statistically significant. Pityriasis alba and pedoculosis lices had the highest prevalence rates of all skin disorders (23.5%, 9.5% respectively). Males had a higher frequency of pityriasis alba (34.8%) than did females (13.6%), But females had a higher frequently of head lices (16.2%) than did males (1.2%). Other diagnoses were eczematous diseases 4.2% followed by infectious diseases (3.6%) and scabies (0.8 %). Others diseases includes Pigmentary patches, insect bites, drug eruptions, vitiligo, cheilosis, spares hair were 7.2%. There is a strong significant differences in presence of pityriasis alba and pediculosis lices among males and females.

The current study has revealed that the top five skin disorders on the list are: pityriasis alba, Pediculosis Lices, Eczematous Diseases , Infectious Diseases and Scabies. They comprised 85.1% of the skin conditions encountered, Pityriasis Alba causes accounted for 47.7% of all cases, and **Pediculosis Lices** causes accounted for 19.6%. The finding that more than 85% of the disorders can be grouped into fewer than six categories is important in designing training programs for medical teams involved in the delivery of primary health care services Gaza strip, where about half of the population is less than 15 years of age.

The study showed differences within the demographics variables and distribution of skin diseases. The prevalence of skin diseases is higher among schoolchildren in six grade (52.1%) than in the first grade (43.2%). In spite of the absence of significant differences

between the two grades, but in looking for specific diseases, results indicated that the prevalence of pediculosis lices in schoolchildren in the sixth grade (14.7%) is higher than the first grade (2.0%) with strong significant differences. These results may be explained in regarding that, the mothers take care more to younger age children than take care the older age, the mothers think that the older children had become more responsible and they capable to depend on them self in washing.

The study showed that skin diseases were significantly more common in rural areas (North of Gaza) than in the semi urban and urban areas (East and West of Gaza respectively).

The findings indicate significant differences between some socio-economic variables and having skin diseases. There is a significant decrease in the prevalence of skin diseases relative to increase years of education attained of mothers. The results showed significant differences regarding the source of drinking water; the findings reveal that the children who use the municipality water are more susceptible to have skin diseases than the children who use filtered water. There are statistical significant differences between children who have animals or birds with children who have not, the first group had skin diseases more than other group. In addition, this study demonstrated that the prevalence of skin diseases did not determine by some socioeconomic factors such as fathers years of education, family income and family size.

Further, the findings pointed to the differences of some hygiene practice variables and having skin diseases. The results showed that the children who share combs, towels, beds, covers, clothes, and socks with others are more likely to be affected by skin diseases than who do not share.

In the light of the data presented in this study, the researcher submits some recommendation in the following paragraph.

6.2. Recommendations:

The study results helped the researcher to develop an in-depth understanding of the size of the problem and to be aware of some risks factors that affect the prevalence of skin diseases. We knew that this study is only the beginning; it is not enough just to record that there are problems; the next step is to do something about them. It is clear from the data reported in this study that more work needs to be done. Based on these data, we make the following recommendations:

1. The researcher recommend the introduction of a preventative health education program for schoolchildren at different levels and their families and teachers on skin diseases to control these health problems.
2. The school can be most helpful by making available accurate information on diagnosis, treatment, and prevention of head lice to the entire school community in an understandable form. Schools and/or local health departments should develop information sheets and visual aids for families.
3. Considering prevention, basic recommendations for improving hygiene (promotion of use of soap, of water for washing, of better household hygiene) would probably benefit certain disorders.
4. Education programs for the general community need to be developed giving information on the nature of common skin diseases, the treatment that are available, they should include education programs in maternal and child health centers, childcare centers, kindergartens, schools, work places and other areas of adult activity.

5. Education programs need to be developed for all professionals or organizations to whom people in the community turn when they are affected by a skin disease. These programs should include general practitioners, pharmacists, and allied health professionals who are in an appropriate. Within the general practice training programs there should be specific units on dermatology. These should highlight the frequency and nature of these common diseases and the relatively simple approaches to management that are available position to provide advice to people with skin diseases.
6. Government and other agents responsible for taking the long-term view of maintaining the health of the community should put more resources into research on the frequency, cause, management and prevention of common skin conditions affecting the community.

6.3. Areas for future research

Several areas were emerged from this research and seem to be needed for further in-depth assessment. These addresses as following

1. Despite the magnitude of skin disease morbidity in the general population, health services research for dermatological disorders has been minimal. Urgent research into the prevalence, incidence and cost of skin diseases is required in order to formulate public health strategies to respond to the impending crisis of increased demand for services. Public involvement in distinguishing between need and demand is crucial and this may vary considerably throughout the population.
2. Research should be undertaken on cohorts of people with common skin diseases following them over time. This will determine the morbidity, the effect on quality

of life, the cost of having these diseases and will enable quantification of the effect on both the individual and the community.

3. There should be regular studies on the frequency of common skin diseases in Gaza strip that have been reported in this study. They should monitor not only the frequency and severity of the disease over time, but also monitor whether there is an increase in the proportion of people who receive care which is appropriate to their needs.
4. Finally, making similar research should be considered in West Bank to make comparison between both areas.

Refrrences

Abdel-Hafez, K., Abdel-Aty, MA., Hofny ER. (Nov, 2003): "Prevalence of skin diseases in rural areas of Assiut Governorate, Upper Egypt". Int J Dermatol.**;42(11):**887-92

Al Quds University, Johns Hopkins University, American Near East Refugee Aid. (2004): "Nutritional Assessment of the West Bank and Gaza Strip, 2003". Jerusalem, CARE and USAID.

Albonico M, Crompton DWT, Savioli L. (1999): "Control strategies for human intestinal helminth infections". Advanced Parasitology;**42:276**–341.

*Alfarra, A., Lubad, S.(2005)***:** health effect due to poor wastewater treatments in gaza strip (www.ipcri.org/watconf/papers/amani.pdf 11/9/2005)

Al-Khawajah, M. M., Al-Shammari, S., Al-Mofadhi, A., Al-Eisa, A., Al-Kudwah A., Al-Saleh, S., et al. (1997): "Spectrum of dermatological disorders in school children in Saudi Arabia, part 1; national guard school in Riyadh". Journal of the Saudi Society of Dermatology and Venereolog; **5**: 214-221.

Amr, ZS., Nusier, MN. (2000): "Pediculosis capitis in northern Jordan". Int J Dermatol; **39**: 919-921.

Assaf, K., al-Khatib, N., Kally, E., Shuval, H. (October, 1993) A Proposal for the Development of a Regional Water Master Plan. Israel/Palestine Center for Research and Information. (www.ipcri.org/files/water.pdf 12.9.2005)

Bahamdan, K., Mahfouz, AA., Tallab, T., Badawi, IA., al-Amari, OM. (Jun, 1996): "Skin diseases among adolescent boys in Abha, Saudi Arabia". Int J Dermatol.**;35(6):**405-7

Barbara, L., Frankowski, MD., MPH., Leonard, B., Weiner, MD, Committee on School Health and Committee on Infectious Diseases (Sep, 2002): "Head Lice". Pediatrics **110 (3)**: 638-643

Bathish R.(2005): Gaza: the days before ,The Day After (http://www.thisweekinpalestine.com/details.php?id=1463&ed=107) 2.11.2005

Bellisari, A. (Winter, 1994): "Public Health and the Water Crisis in the Occupied Palestinian Territories". Journal of Palestine Studies, 23(2): 55

Bharja, SC., Kanwar, AJ., Singh, G., Belhaj, MS. (1988): "Pediculosis capitis in Benghazi, Libya. A school survey". Int J Dermatol; **27**: 165-166.

Bhopal, R. (1992): "Needs of black and ethnic minorities". Br Med J; **305** : 1156-7.

Breeze, E., Trevor, G., Wilmot. A. (1991): The 1989 General Household Survey. London: HMSO.

Centers for Disease Control and Prevention (CDC, Atlanta), (2001): **Treating Head Lice Infestation** (http://www.cdc.gov/ncidod/dpd/parasites/lice/factsht_head_lice_treating.29.10.2005)

Charles, R., Taylor, M.D., Arthur, J., Sober, M.D. (1996): "Sun exposure and skin disease". Annual Review of Medicine ; **47**: 181-191

Chunge, RN., Scott, FE., Underwood JE., Zavarella KJ. (1991): "A pilot study to investigate transmission of head lice". Can J Public Health; **82** :207 –208

Diepgen, T.L., Coenraads, P.J. (1999): "The epidemiology of occupational contact dermatitis". Int Arch Occup Environ Health; **72**: 496-506

Doll, R. (1987): Foreword . In: Hennekens, CH., Buring, JE., Mayrent, SL. (eds.) **Epidemiology in Medicine**. Toronto: Little, Brown and Co.,: xi-xii.

Downs, A., Harvey, I., Kennedy, C. (1999): "The epidemiology of head lice and scabies in the UK.". Epidemiol Infect;**122**:471-477.

Dunnell, K., Cartwright, A. (1972): **Medicine Takers, Prescribers and Hoarders. Report of the Institute of Social Studies in Medical Care**. London: Routledge and Kegan Paul,

El Badawy, A. et al.(2000): "Epidemiological study of the common dermatoses among school students in the Zagazig District of Egypt" 128th Annual Meeting of the American Public Health Assiciation 12-16 Nov

English, JSC', Dawe, RS. Ferguson, J. **(2003): "Environmental effects and skin disease"**British Medical Bulletin **68:**129-142

Estrada, JS., Morris, RI. (2000): "Pediculosis in a school population". J Sch Nurs; **16**: 32-38.

Gad, ZM., Hamed, FM. (1984): "Prevalence of skin diseases among schoolchildren in Qatar (1979)". Bull High Inst Public Health; **14**: 119-129.

Gbakima, A.A., Lebbie, A.R. (1992): "The head louse in Sierra Leone: an epidemiological study among school children, in the Njala area". West Afr J Med; **11**:165-71.

Gibbs, S. (Sep, 1996): "Skin disease and socioeconomic conditions in rural Africa: Tanzania". Int J Dermatol.;**35(9)**:633-9

Grob, JJ., Stern. R.S, MacKie, RM., Weinstock, MA. (eds). (1997): **Epidemiology and Prevention of Skin Diseases**. Oxford, Blackwell Scientific Publications,

Henderson, DA., Inglesby, TV., Bartlett JG, Ascher MS, Eitzen E, Jahrling PB, et al. (1999): "Smallpox as a biological weapon: medical and public health management. Working Group on Civilian Biodefense" . JAMA.;281:2127-37.

Hywel, W., Ake, et al. (2000): "Epidemiology of Skin Disease in Europe" The European Dermato-Epidemiology Network (EDEN) (http://orgs.dermis.net /content/e02eden

/e04research /e95/ index_ger.html 19/8/2005)

Iain, Ch. (December, 2003): "The James Lind Initiative". J. R. Soc. Med.,. 96 (12): 575-576

Inanir, I., Sahin, MT., Gunduz, K., Dinc, G., Turel, A., Ozturkcan, S. (Jul-Aug 2002): "Prevalence of skin conditions in primary school children in Turkey: differences based on socioeconomic factors". Pediatr Dermatol.;**19(4)**:307-11

Johnson, M-LT. (1978): "skin conditions and related need for medical care among persons 1-74 years, United States, 1971-1974". Vital and Health Statistics: **11** (212): 1-72.

Juran, JM.(1975): **Juran on quality and design**. New York: Free Press:57–71.

Karen P.(Nov, 1998): Essentials of ICD-10-AM An information package for clinicians and users of coded data, Skin.. (http:// www2.fhs.usyd.edu.au/ncch/ clined 15.3.2005)

Klevay, LM. (May, 1997): "Pellagra is not infectious! (Goldberger, 1916)". J Nutr.;**127**(5 Suppl):1032S-1034S.

Kokturk, A., Baz, K., Bugdayci, R., Sasmaz, T., Tursen, U., Kaya, TI., Ikizoglu, G. (**Sep** 2003) "The prevalence of pediculosis capitis in schoolchildren in Mersin, Turkey". Int J Dermatol.**;42(9):**694-8.

Kristensen, JK. (1991): "Scabies and pyoderma in Lilongwe, Malawi: Prevalence and seasonal fluctuation". Int J Dermatol; **30**: 699-702.

Leyden, JJ. (1990): "Clinical features of ageing skin". Br J Dermatol ; **122**(Suppl 35):1-3.

Lin, RL., Janniger, CK. (2005): "Pityriasis alba". Cutis. Jul;76(1):21-4.

Mahé, A. , Faye, O., Fanello, S. (Apr, 1991): "Skin disease and public health medicine". Lancet. 27;337(8748):1008-9

Mann C J (2003):"Observational research methods. Research design II: cohort, cross sectional, and case-control studies" Emerg Med J; 20:54-60

Mar A, Marks R. (2000): Prevention of atopic dermatitis. In: Williams, HC. (Ed.) **Atopic Dermatitis:The epidemiology, causes and prevention of atopic eczema.** Cambridge University Press, Cambridge.

Marmot, M.G., Adelstein, A.M. Bulusu, L. (1978), Immigrant mortality in England and Wales. London: HMSO, Marmot.

Maunder, JW. (1985): "Human lice: some basic facts and misconceptions". Bull Pan Am Health Org.; **19** :194 –197

McCarthy, JS., Kemp, DJ., Walton, SF. Currie, BJ. (Jul, 2004): " Scabies: more than just an irritation". Postgrad Med J.;80(945):382-7.

Williams, HC., Burney, PGJ., Hay, RJ. (1994): . "The U.K. working party's diagnostic criteria for atopic dermatitis, Derivation of a minimum set of discriminators for atopic dermatitis". Br J Dermatol;**131**: 383-96.

Meding, B. (1992): "Normal standards for dermatological health screening at places of work". Contact Dermatitis; **27**: 269-70.

Meinking, T., Taplin, D. (1995): Infestations. In: Schachner, LA., Hansen, RC. (eds). **Pediatric Dermatology**. **2nd** (ed.) New York, NY: Churchill Livingstone :1347–1392

Meinking, TA. (1999): "Infestations". Current Problems in Dermatology.; **11** :73 –120

Mimouni, D., Ankol, OE., Gdalevich, M., Grotto, I., Davidovitch, N., Zangvil, E. (2002): "Seasonality trends of pediculosis capitis and pthirus pubis in a young adult population: follow-up of 20 years". J Eur Acad Dermatol Venereol; **16**: 257-259.

Ministry of Education & Higher Education(MoE) (2005): Statistics About General Education in Palestine 2005-2006. (www.mohe.gov.ps/stats/statistic.pdf 13/12/2005)

Ministry of Health (MOH), (2002): The status of Health in Palestine: Annual Report (2001) Palestine.

Ministry of Health (MOH), (2003): The status of Health in Palestine: Annual Report (2002) Palestine.

Ministry of Health (MOH), (2004): The status of Health in Palestine: Annual Report (2003) Palestine.

Ministry of Health (MOH), (2005): The status of Health in Palestine: Annual Report (2004) Palestine.

Montresor, A.,Crompton, DWT.,Hall, A., Bundy, DAP.; Savioli, L. (1998): "Guidelines for the evaluation of soil transmitted helminthsiases and schistosomiasis at community level". World Health Organisation, Geneva, WHO/CTC/SIP/98.

Morsy, TA., el-Ela, R.G., Mawla, M.Y.and Khalaf, S.A. (Apr, 2001), "The prevalence of lice infesting students of primary, preparatory and secondary schools in Cairo, Egypt". J Egypt Soc Parasitol.**;31(1)**:43-50.

Mostafa, AA., Hassan, AH., Bahamdan, K. (1996): "Skin disorders among male schoolchildren in the Asir Region, Southwestern Saudi Arabia". Ann Saudi Med; **16**: 342-345.

Nanda, A., Al-Hasawi, F., Alsaleh, QA.(Jan-Feb, 1999): "A prospective survey of pediatric dermatology clinic patients in Kuwait: an analysis of 10,000 cases". Pediatr Dermatol.;**16**(1):6-11**.**

Nelson, KE., Bisno, AL., Brunt, J., Moses, VK., Haque, RU. (1976): "The epidemiology and natural history of streptococcal pyoderma: an endemic disease of the rural southern United States". Am J Epidemiol;**103**: 270-83.

Office of Population Censuses and Surveys. (1992): Mortality Statistics. London: HMSO, 1994.

Palestinian Central Bureau of Statistics (PCBS), 2006): Palestinians in Diaspora and in Historic Palestine End Year 2005. (http://www.palestinemonitor.org/nueva_web/infos_materials/reports/palestinians_in_diaspora.htm 5/1/2006)

Palestinian Central Bureau of Statistics (PCBS), Birzeit University. (2003): Nutrition Survey - 2002.. Ramallah,

Palestinian Central Bureau of Statistics PCBS (2006): Labour Force Survey:(October - December, 2005) Round, (Q4/2005). Press Conference on the Labour Force Survey Results. Ramallah - Palestine.

Palestinian Central Bureau of Statistics, PCBS (2001). "Dumping Site Survey 2001." Ramallah, Palestine

Palestinian Central Bureau of Statistics, PCBS (2004a): "Education—Current Main Indicators". findings from the Educational Institutions Census 2003/2004, (http://www.pcbs.org/educatio/edu_main.aspx 3/9/2005).

Palestinian Central Bureau of Statistics, PCBS (2004b): "Demographic and Health Survey 2004". Press Conference on the Initial Survey Results. Ramallah,

Palestinian Refugee and Diaspora Centre,(2005).: Palestinian Refugees (www.shaml.org/zshaml/site/ 13.2.2005)

Paredes, SS., Estrada, R., Alarcon, H., Chavez, G., Romero, M., Hay, R. (1997): "Can school teachers improve the management and prevention of skin disease? A pilot study based on head louse infestations in Guerrero, Mexico". Int J Dermatol. Nov;**36**(11):826-30

Porter, MJ. (1979): "Seasonal change and its effect on the prevalence of infectious skin disease in a Gambian village". Trans R Soc Trop Med Hyg;**74**:162-8.

Price, J., Burkhart, H., Burkhart, C., Burkhart, N., & Islam, C. (1999): "School nurses' perceptions and experiences with head lice". Journal of School Health. 69. 163-68.

Rea, JN., Newhouse, ML., Halil, T. (1976): "Skin disease in Lambeth: a community study of prevalence and use of medical care". Br J Prev Soc Med; 30: 107-14.

Richard, S. et al. (1994): "Noninvasive measurement of the effect of lifetime exposure to the sun on the aged skin". Photodermatology, Photoimmunology & Photomedicine ; **10(4):**164-169,.

Rose, G., (1988): Sick individuals and sick populations. In: Buck, C., Llopis, A., Nájera, E., Terris, M.(eds.). **The Challenge of Epidemiology**. Washington: Pan American Health Organization,: 829-37.

Ryan T.J. (1991): "Disability in dermatology". Br J Hosp Med;**46**:33-6.

Ryan, TJ., (1994): "Healthy skin for all". Int J Dermatol; **33**: 829-35.

Saab, BR., Shararah, N., Makarem, M. (1996): "Data from a public school health project in Beirut" . J Med Liban; **44**: 663-67l.

Sarov, B., Neumann, L., Herman, Y. and Naggan, L. (Mar, 1988): "Evaluation of an intervention program for head lice infestation in school children". Pediatr Infect Dis J.;**7(3)**:176-9.

Schmeller, W., Dzikus, A. (2001): "Skin diseases in children in rural Kenya: long-term results of a dermatology project within the primary health care system". Br J Dermatol;**144** :118-24.

Secretariat for the NPAPC, El Bireh,

Shakkoury, W.A. , Abu-Wandy, E. (Sep 1999): "Prevalence of skin disorders among male schoolchildren in Amman, Jordan" .East Mediterr Health J.;**5(5):**955

Shtayeh, MS., Salameh, AA., Abu-Ghdeib, SI., Jamous, RM., Khraim, H. (Jun, 2002): "Prevalence of tinea capitis as well as of asymptomatic carriers in school children in Nablus area (Palestine)". Mycoses.**;45(5-6)**:188-94

Silver, S.E. (1992): "Melanocytic nevus density in Asian, Indo-Pakistani, and white children". J Am Acad Dermatol ; **27** : 277-88.

Singer, K.H., Tuck, D.T., Sampson, H.A., Hall, R.P. (1989): "Epidermal keratinocytes express the adhesion molecule intracellular adhesion molecule-1 in inflammatory dermatoses". J. Invest. Dermatol. **92**:746-750.

Taplin, D., Porcelain, SL. and Meinking, TL. (1991): "Community control of scabies: a model based on the use of permethrin cream", Lancet; **337**: 1016-18.

The American Heritage Stedman's Medical Dictionary. (2002): sanitation. Houghton Mifflin Company,. (http://www.answers.com/topic/sanitation 15. 3. 2005)

The British Market Research Bureau (1987): **Everyday Health Care: A Consumer Study of Self-medication in Great Britain**. London: Ltd,.

The Palestinian Information Center (2003): The Land & History: The geography of Palestine.
(http://www.palestine-info.co.uk/am/publish/printer_15.shtml 15.4.2005)

Trent, JT., Federman, D., Kirsner, RS. (2001): "Common bacterial skin infections". Ostomy Wound Manage.;**47**:30-34.

United Nations Relief Works Agency (UNRWA), (2004): Anaemia Study (preliminary results) U.S. Agency for International Development, World Bank, August 2002.

Vinod, S., Singh, G., Dash, K., Grover, S. (2002): "Clinico epidemiological study of pityriasis alba" . Indian J Dermatol Venereol Leprol ;**68**:338-340

Weinstock, M.A. (1997): "Melanoma and nevi". In: Williams, HC., Strachan, DP.(eds.) **The Challenge of Dermato-Epidemiology**. Boca Raton: CRC Press: 191-207.

WHO, UNICEF (2000): "Global Water Supply and Sanitation Assessment 2000 Report" . Geneva & New York : p. 2

Wikipedia (2005): hygiene.(http://www.answers.com/topic/hygiene 25. 3. 2006)

Wikipedia (2005): infestation (http://www.answers.com/topic/infestation-3 10. 3. 2005)

Wikipedia, (2005): Physical examination. (http://www.answers.com/topic/physical-examination) 20 .3. 2005

Williams, H. et al. (2001): Epidemiology of skin disease in Europe. In: Fritsch P. (Ed.) **White Book Dermatology and Venereology in Europe**. European Dermatology forum. Bern; 5-15.

Williams, H.C., Pembroke, A.C., Forsdyke, H. (1995): "London-born black Caribbean children are at increased risk of atopic dermatitis". J Am Acad Dermatol; **32**: 212-17

Williams, HC. (1997): Dermatology. In: Stevens, A., Raftery, J.(eds.). **Health Care Needs Assessment, Series II**. Oxford: Radcliffe Medical Press,: 261-348.

Williams, HC. (1998): Epidemiology of skin diseases. In: Champion, RH., Burton, JL., Burns, DA., Breathnach, SM. (eds.) **Textbook of dermatology**, 6th ed. Oxford: Blackwell Science :139–158.

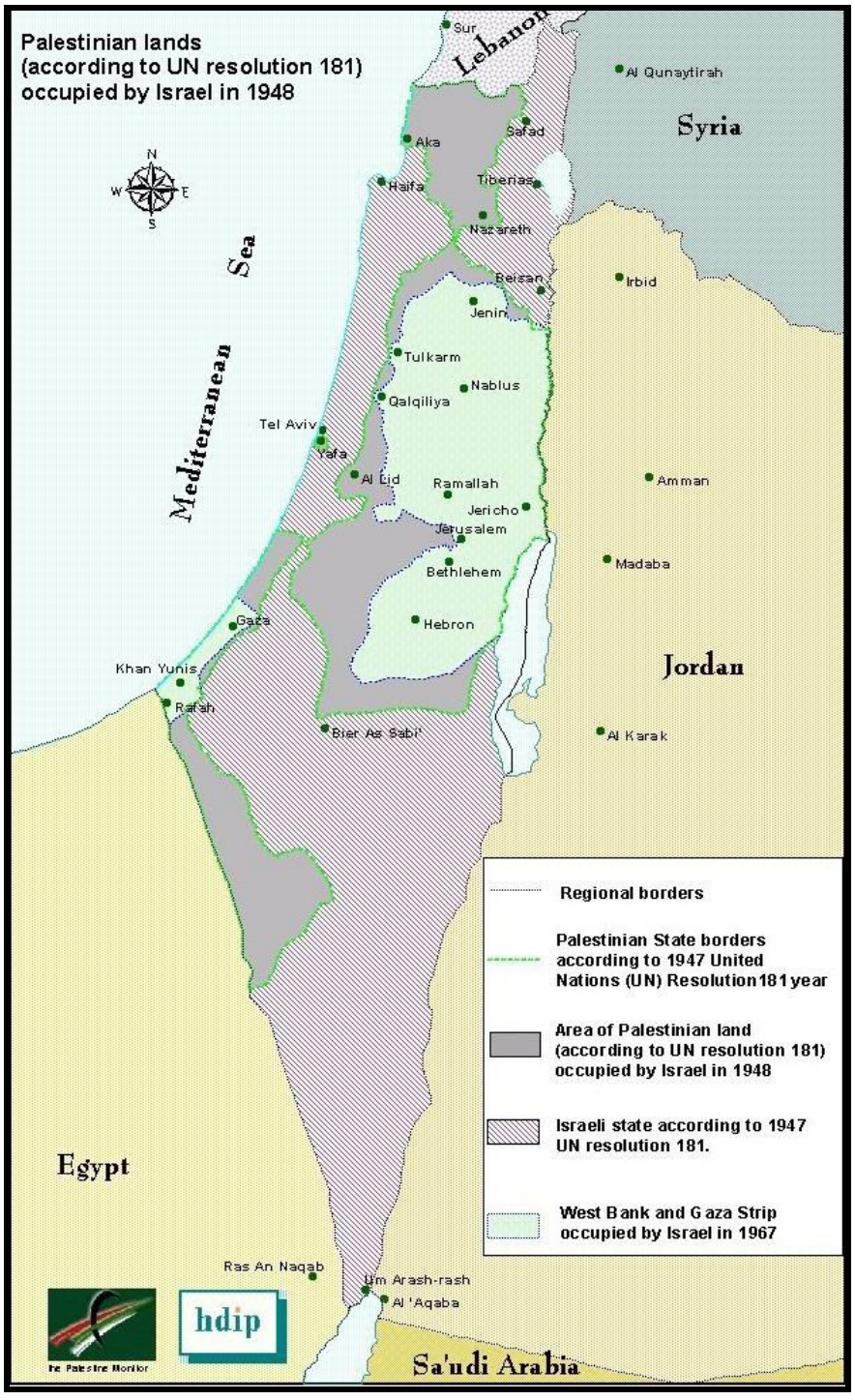
Williams. HC., Strachan, DP., Hay, RJ. (1994): "Childhood eczema: disease of the advantaged?". Br Med ; 308: 1132-5.

Worth, R.M., (1962): "Atopic dermatitis among Chinese infants in Honolulu and San Francisco". Hawaiian Med J; **22**: 31-6.

Wu, YH., Su, HY., Hsieh, YJ. (2000): "Survey of infectious skin diseases and skin infestations among primary school students of Taitung County, eastern Taiwan". J Formos Med Assoc. **Feb;99(2)**:128-34

Annex (1)

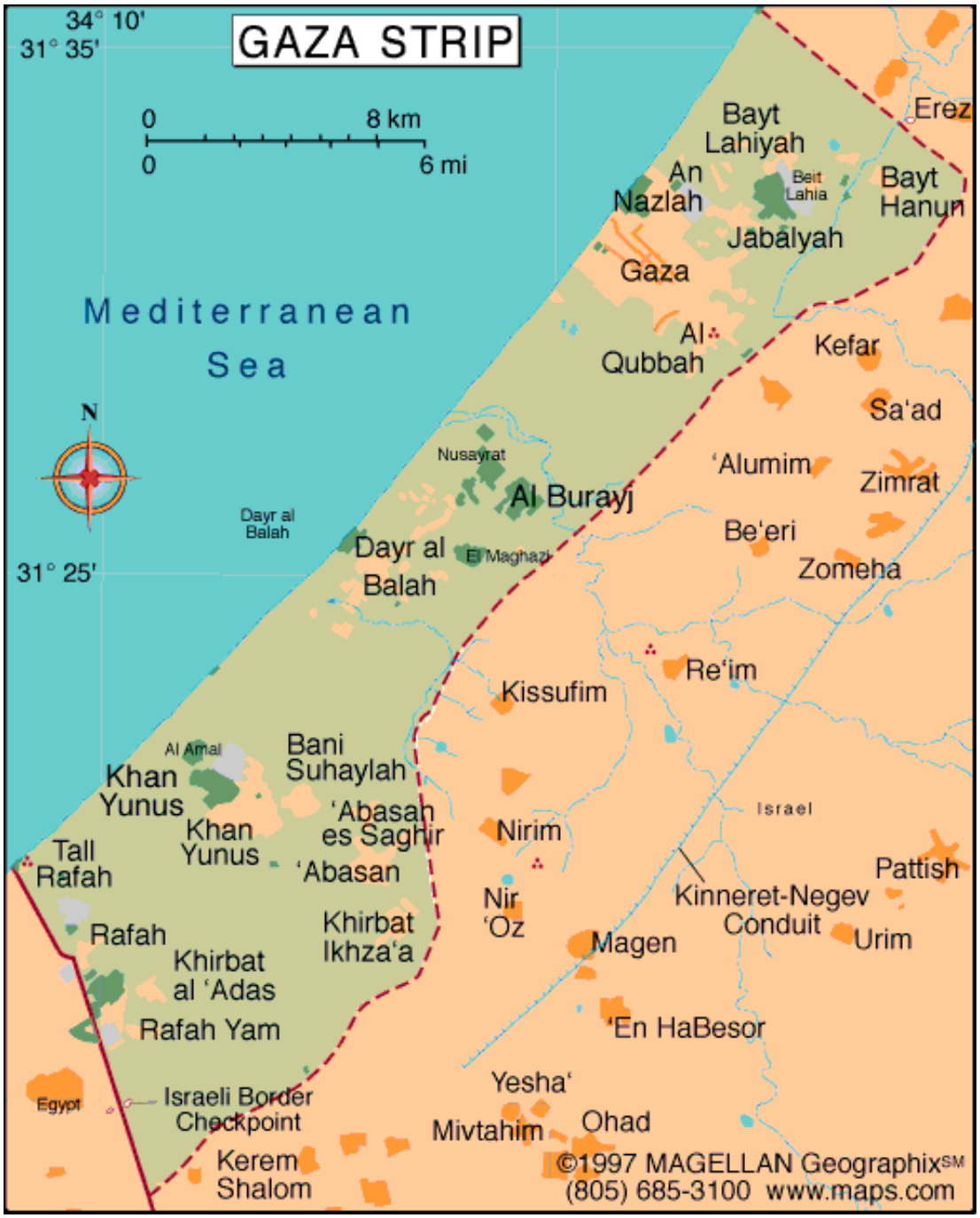
Palestine



Source: http://www.palestinemonitor.org/maps/Palestinian_lands_181.htm 21.9.2005

Annex (2)

Gaza Strip



Source: http://www.infoplease.com/atlas/country/gazastrip.html

Annex (3)

بسم الله الرحمن الرحيم

Palestinian National Authority
Ministry of Health
Helsinki Committee

السلطة الوطنية الفلسطينية
وزارة الصحة
لجنة هلسنكي

Date: 3/5/2005

التاريخ: 2005/5/3

Mr./ Ra'fat Naeim

السيد: رأفت نعيم

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

نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم حول:-

Prevalence of skin diseases Among School Children in Gaza Strip.

انتشار الأمراض الجلدية بين طلبة المدارس في قطاع غزة.

In its meeting on May 2005
and decided the Following:-
To approve the above mention research study.

و ذلك في جلستها المنعقدة لشهر مايو 2005
و قد قررت ما يلي:-
الموافقة على البحث المذكور عاليه.

Ministry of Health Helsinki Committee

Signature
توقيع

Chairperson

Member
عضو

Member
عضو

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.

Gaza Etwam – Telefax 972-7-2878166

Annex (4)

بسم الله الرحمن الرحيم

السلطة الوطنية الفلسطينية
وزارة التربية والتعليم العالي

Palestinian National Authority
Ministry of Education & Higher Education

الإدارة العامة للتخطيط التربوي
الرقم: و ت غ/ مذكرة داخلية ٠٠٤
التاريخ: ١ ربيع أول ، ١٤٢٦هـ
الموافق: ١٠ نيسان ، ٢٠٠٥م

السادة / مدراء التربية والتعليم – محافظات غزة المحترمون،،،
تحية طيبة وبعد،،،

الموضوع : تسهيل مهمة إجراء بحث

يقوم الباحث / رأفت نعيم والمسجل ببرنامج الماجستير في كلية الصحة العامة في جامعة القدس بعمل بحث بعنوان " مدى انتشار الأمراض الجلدية بين أطفال المدارس في قطاع غزة " .

لا مانع من قيام الباحث بتوزيع استبانة الدراسة على عينة البحث وهم أطفال المدارس في قطاع غزة التابعين لوزارة التربية والتعليم العالي في محافظات غزة، وذلك حسب الأصول .

وتفضلوا بقبول فائق الاحترام ،،،

/ وزير التربية والتعليم العالي
وكيل الوزارة
د. عبد الله عبد المنعم

نسخة السيد: م. مدير عام التخطيط التربوي

غزة. هاتف(08-2861409 -2849311) فاكس(08-2865909) Fax:(08-2865909) Gaza (08-2861409-2849311)
E-MAIL: MOEHE@GOV.PS

Annex (5): Informed consent (Arabic copy)

نموذج موافقة لاجراء بحث صحي

حضرة والد/ والدة الطفل المحترم / المحترمة

نتطلع لمساعدتكم في إتمام دراسة حول انتشار الأمراض الجلدية بين أطفال المدارس الابتدائية في قطاع غزة . علماً بأن هذه الدراسة هي للحصول على درجة الماجستير في الصحة العامة من جامعة القدس.

تهدف هذه الدراسة إلى تطوير الخدمات الصحية بشكل عام وتحسين الخدمات المقدمة للوقاية من الاصابة بالأمراض الجلدية بشكل خاص.

ونرجو من حضرتكم الاشتراك في هذه الدراسة وذلك بتعبئة النموذج المرفق والإجابة عن الأسئلة المتعلقة بالطفل والعائلة. وسيتم فحص طفلكم من قبل طبيب مختص بالأمراض الجلدية بالكشف عليه في غرفة مستقلة مع ضمان سرية نتيجة الفحص و ضمان وصف العلاج المناسب في حالة وجود أي مرض جلدي.

ونود أن يكون واضحاً لديكم أنه لن يتم فحص الطفل إلا بعد توقيعكم بالموافقة على الفحص وفي حال موافقتكم سيتم احترام سرية المعلومات الموجود في الاستبانة.

نود الشارة أن هذه الدراسة ليست ممولة من أي جهة كانت ولن يترتب على مشاركتكم فيها أية التزامات .

الموافقة على فحص الطفل

أوافق : ☐

لا أوافق: ☐

توقيع ولي أمر الطفل الباحث

رأفت رمضان نعيم

Annex (5): Informed consent (English copy)

Consent form and covering letter

Dear participant,

I will appreciate your participation in the completion of this study about the prevalence of skin diseases among primary schoolchildren.

This study is for the partial fulfillment of the master degree in public health from Al-Quds University, Palestine.

The general aim is to improve health services among schoolchildren in Gaza Strip.

I will appreciate your participation in this research through filling this questionnaire and by giving us your permission for a clinical examination for your child, Your child will be examined by an experienced dermatologist in a private room the same school. For the infected children, appropriate treatment will be prescribed at the time of examination.

The purpose is scientific research and all information that we obtain will be confidential. All response will be analyzed as group data no individual responses will be identified.

permission for diagnostic procedures:

Yes ☐

No ☐

Signed _____

Researcher

Rafat R. Naim

Annex 6: Self-administered questionnaire (Arabic copy)

الاستبيان

معلومات شخصية

1-الإسم : ..... 2- الرقم التسلسلي: .....

3-اسم المدرسة :..... 4- الجنس: .....

5- العمر: .....

الخلفية الديمغرافية والمعيشية للأسرة

6- عدد أفراد الأسرة : ..... 7- ترتيب الطفل في الأسرة : .....

8- مهنة الأب : ..... 9- مهنة الأم :.....

10- عدد سنوات الدراسة للأب : ..... 11- عدد سنوات الدراسة للأم:.....

12- درجة القرابة بين الأم والأب

1- أبناء عم أوعمة ❐ 2- أبناء خال أو خالة ❐ 3-من نفس العائلة فقط ❐ 4-لا يوجد صلة قرابة ❐

13- عدد غرف البيت (بدون المطبخ والحمامات والصالون) : .....

14- نوع البناء : 1- شقة داخل عمارة ❐ 2- بناء مستقل ❐

15- ملكية المنزل 1- ملك خاص ❐ 2- وكالة الغوث ❐ 3- مستأجر ❐

16- نوعية البناء 1- باطون 2- زينكو ❐ 3- اسبست ❐ 4- غير ذلك ❐

17- دخل الأسرة في الشهر : ..... لا أعرف :

صحة البيئة

أولاً : البيت

18- ما هو المصدر الذي تستعملونه في بيتكم للشرب ؟

1- شبكة البلدية ❐ 2- فلتر ❐ 3- مياه من سيارات التوزيع ❐ 4- زجاجات معدنية ❐

5- من التنكات في الشوارع ❐ 6- أخرى ❐

19- هل كان هناك إنقطاع في المياه خلال الأسبوعين الأخيرين ؟ نعم ❐ لا ❐

20- لو كان نعم كم يوم كنتم دون مياه في الأسبوعين الآخرين ؟ .....

21- في الأسبوعين الأخرين كان هناك مياه كافية للاستحمام ؟ نعم ❐ لا ❐

22- هل تعتقد أن المياه التي تصلكم صحية ونظيفة ؟ نعم ❐ لا ❐

23- نوع المرحاض في السكن ؟

1- مرحاض عربي ❐ 2 - مرحاض إفرنجي ❐ 3- مرحاض عربي وافرنجي ❐

24- كيف يتم تصريف المياه العادمة ؟

1- شبكة مجاري عامة ❐ 2- شبكة مجاري مفتوحة ❐ 3- حفرة امتصاصية ❐

25- هل يوجد أي حيوانات أو طيور في المنزل ؟ نعم ❐ لا ❐

26- إذا كان نعم حدد : .....

27- هل هناك أي قوارض (فئران و عرس) ؟ نعم ❐ لا ❐

28- هل هناك مشكلة حشرات (ذباب ، باعوض ، صراصير) ؟ نعم ❐ لا ❐

29- هل هناك أي مدخنين في البيت ؟ نعم ❐ لا ❐

30- المنزل 1- بجوار مصنع : نعم ❐ لا ❐

2-بجوار طريق رئيسي : نعم ❐ لا ❐

3- غبار (تراب) : نعم ❐ لا ❐

ثانياً: المدرسة :

31- كم عدد الطلاب في فصلك ؟ .....

32- كم عدد الطلاب الذين يشاركونك المقعد ؟ .....

33- هل المياه متوفرة دائماً في المدرسة ؟ نعم ❐ لا ❐

34-هل تعتقد أن المياه الموجودة في المدرسة نظيفة ؟ نعم ❐ لا ❐

35- نوع ا لمرحاض في المدرسة ؟

1- مرحاض عربي ❐ 2- مرحاض إفرنجي ❐ 3- مرحاض عربي وافرنجي ❐

36-هل المراحيض دائماً نظيفة ؟ نعم ❐ لا ❐

37- هل المياه دائماً متوفرة في المراحيض ؟ نعم ❐ لا ❐

38- هل يوجد صابون لغسل اليدين في المدرسة ؟ نعم ❐ لا ❐

الممارسات الصحية :

39-كم مرة تقوم بالاستحمام ؟

1- يومياً ❐ 2- يوم بعد يوم ❐ 3- مرتين اسبوعياً ❐ 4- مرة في الأسبوع ❐

5- أكثر ❐ حدد.....

40-هل تتشارك مع آخرين في المشط ؟ نعم ❐ لا ❐

41- هل تتشارك مع آخرين في المنشفة ؟ نعم ❐ لا ❐

42- هل تتشارك مع آخرين في الأغطية ؟ نعم ❐ لا ❐

43- هل تتشارك مع آخرين في نفس السرير ؟ نعم ❐ لا ❐

44- هل تتشارك مع آخرين بعض الملابس ؟ نعم ❐ لا ❐

45- هل تتشارك مع آخرين في الجوارب ؟ نعم ❐ لا ❐

الخدمات الصحية

46- هل لديكم تأمين صحي ؟ نعم ❐ لا ❐

47- هل المسافة بين المنزل والمركز الصحي بعيدة ؟ نعم ❐ لا ❐

48- هل يوجد طبيب مختص في الآمراض الجلدية في المركز الصحي ؟ نعم ❐ لا ❐

49- حسب رأيك هل الأدوية متوفرة في المركز الصحي ؟ نعم ❐ لا ❐

Annex 7: Self-administered questionnaire (English copy)

Questionnaire

Personal Child Data

1-Name :……. 2- Serial number : …….

3-School name: ……

4-Age: …….years old 5-Sex: ……

Demographic and Socioeconomic Data

6- Composition of child family : ……..

7-Order of child in the family: ……..

8- The occupation of father: …….

9- The occupation of father:……..

10- Number of mother educational Years : ……..

11- Number of father educational Years : …….

12- Degree of half-blood between mother and father

1- Cousin ❐ 2- from the same family ❐ 3- No half blood ❐

13- Number of rooms in your house (except the hall, kitchen and Bath room)? .....…

14- What is the kind of building?

1-Asbestos ❐ 2-Metal sheets ❐ 3-Concrete ❐ 4-Others ❐

15- Property of the house:

1- Rent ❐ 2- Property ❐ 3- UNRWA ❐

16- The Type of building

1- Apartment ❐ 2- Independent ❐

17- Current family monthly income: ……

Environment and sanitation

At home

18- The source of drinking water

1- Municipality water ❐ 2- Water vehicle ❐ 3- from tanks ❐ 4- Filter ❐

5- Bottles ❐ 6- Others ❐

19- was there any breaking of water in the last two weeks ?

1- Yes ❐ 2- No ❐

20- If yes How many days? ……..

21- In the last two weeks, was there enough water for bathing?

1- Yes ❐ 2- No ❐

22- Do you think that the water (which reaches to you) is clean?

1- Yes ❐ 2- No ❐

23-What is the type of WC in your home?

1- Foreign ❐ 2- Turkish ❐ 3- Foreign and Turkish ❐

24- What is the type of sewage you use?

1-Public sewage ❐ 2- Pit ❐ 3- Open sewage ❐

25- Is there any animals or birds in your home?

1- Yes ❐ 2- No ❐

26- If yes specify ……

27- Is there any mice in your home?

1- Yes ❐ 2- No ❐

28- Do you have problem of insects in your home?

1- Yes ❐ 2- No ❐

29- Is there any smokers in your home?

1- Yes ❐ 2- No ❐

30 – Your house is:

1- Near an industry: 1- Yes ❐ 2- No ❐

2- Near main street: 1- Yes ❐ 2- No ❐

3- Near road : 1- Yes ❐ 2- No ❐

In the school:

31- How many pupils in your class? ……

32- how many pupils share you your disk ? …….

33- Is the water always available in the school?

1- Yes ❐ 2- No ❐

34- Do you think the water is clean ?

1- Yes ❐ 2- No ❐

35- What is the type of WC in school?

1- Foreign ❐ 2- Turkish ❐ 3- Foreign and Turkish ❐

36- Are the WCs always clean?

1- Yes ❐ 2- No ❐

37- Is the water always available in the WC?

1- Yes ❐ 2- No ❐

38- Is there soup for washing hands in school?

About hygiene :

39- How frequent do you wash your self?

1- Daily ❐ 2- Alternate days ❐ 3- Two times a week ❐

4- Once a week ❐ Others ❐

40- Do you share combs with others , ?

1- Yes ❐ 2- No ❐

41- Do you share towels with others?

1- Yes ❐ 2- No ❐

42-Do you share bed with others?

1- Yes ❐ 2- No ❐

43-Do you share covers with others?

1- Yes ❐ 2- No ❐

44-Do you share clothes with others?

1- Yes ❐ 2- No ❐

45-Do you share socks with others?

1- Yes ❐ 2- No ❐

Health services

46- Do you have health insurance?

1- Yes ❐ 2- No ❐

47- Is the distance between your home and the health centre is far?

1- Yes ❐ 2- No ❐

48- Is there a dermatologist in the health centre?

1- Yes ❐ 2- No ❐

49- Do you think that the medicaments are always available?

1- Yes ❐ 2- No ❐

Annex 7: Clinical Examination

Clinical Examination

Name :…… No.……

Rank	Rank	Condition	Rank
Acne	**1.**	Pemphigus	**2.**
Atopic dermatitis	**3.**	Perioral dermatitis	**4.**
Baldness	**5.**	Pityriasis rosea	**6.**
Contact dermatitis	**7.**	Pityriasis rubra pilaris	**8.**
Eczema	**9.**	Psoriasis	**10.**
Epidermolysis bullosa	**11.**	Scabies	**12.**
Erysipelas	**13.**	Pediculosis	**14.**
Hidradenitis suppurativa	**15.**	Seborrhoeic dermatitis	**16.**
Hyperhidrosis	**17.**	Tinea	**18.**
Ichthyosis	**19.**	Tinea corporis	**20.**
Impetigo	**21.**	Tinea pedis	**22.**
Keratosis pilaris	**23.**	Tinea unguium	**24.**
Keloid	**25.**	Tinea capitis	**26.**
Lichen planus	**27.**	Tinea cruris	**28.**
Lipomas	**29.**	Tinea barbae	**30.**
Lymphadenitis	**31.**	Tinea versicolor	**32.**
Malignant melanoma	**33.**	Viral warts	**34.**
Miliaria	**35.**	Vitiligo	**36.**
Molluscum contagiosum	**37.**	**Other :.....**	
Nummular dermatitis	**38.**	**……**	
		……	

51-Did you consult anyone to treat this illness?

1-Yes ❐ 2-No ❐

52- Did you ask the doctor the name of your illness?

1-Yes ❐ 2- No ❐

53-Did the doctor physically examine you?

1- Yes ❐ 2- No ❐

54-Do you feel you had the chance to fully tell about your illness to the doctor?

1-Yes ❐ 2- No ❐