Epidemiological profile of non-sexually transmitted infectious skin diseases in the Dermatologic Outpatient Clinic of El Fayoum General Hospital, El Fayoum Governorate (2011-2012).

Thesis

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Abstract

Background: The importance of hospital-attendance based studies is to build healthcare strategies that cope with community requirements and actual citizens' needs.

Objective: To estimate the relative frequency, prevalence and risk factors of non-sexually transmitted infectious skin diseases among the population of El Fayoum Governorate.

Methods: This is a descriptive cross-sectional study conducted on patients attending the Dermatologic Outpatient Clinics of El Fayoum General Hospital, during the period from January, 2012 to June, 2012. The diagnoses were based on full medical history and clinical dermatological examination. This study included 1500 patients of both sexes (54.4% females, 45.6% male), with ages ranging from one day to 79 years. The patients were grouped into four age groups: pediatric (0-17years), adult group (18-40 yrs), middle-aged group (41-60 yrs) and elderly group (>60 yrs), educational level (illiterate, primary education, preparatory, secondary and university education), working status (not working, workers, farmers, employees, housewives and students), number of family members (< 5 or ≥ 5), number of persons per room (< 3 or ≥ 3), number of students per class (< 40 or ≥ 40), nutritional status and history of smoking.

Results: The most frequent infectious skin diseases were fungal infections (48.4%), followed by viral infections (29.8%), parasitic infestations (15.7%) , then bacterial infections (11.3%).Tinea capitis and pityriasis versicolor were the commonest fungal infections (10.5%, 10.6% of all infections respectively), warts were the commonest viral infections (20.9%). Scabies (9.5%) and pediculosis capitis (6.1%), were the most frequent parasitic infestations and impetigo was the commonest bacterial infection (9%). The majority of infectious skin diseases were found amongst the adult age group, with a male to female ratio1:1.2. Most of the patients (82.4%) of the current sample, came from rural areas.

Conclusion: The most prevalent non-sexually transmitted skin infections in El-Fayoum Governorate, are the superficial mycoses, followed by viral infections. Children and adults are the age groups, most frequently affected. Large family numbers, with crowded homes, and overcrowding in classes are common risk factors among patients.

Keyword: Epidemiology-Relative frequency – Super facial mycoses

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List of Abbreviations

(AIDS)	Acquired immunodeficiency syndrome.
(CL)	Cutaneous Leishmaniasis.
(E.floccosum)	Epidermophyton floccosum.
(GABHS)	group A beta-hemolytic Streptococci.
(HIV)	Human immunodeficiency virus.
(HPV)	Human papilloma virus.
(HSV)	Herpes simplex virus.
(HZ)	Herpes zoster.
(IgE)	Immunoglobulin E.
(L.aethiopica)	Leishmania aethiopica
(L.major)	Leishmania major.
(L.tropica)	Leishmania tropica
(M.canis)	Microsporum canis.
(MRSA)	Methicillin-resistant Staphylococcus aureus.
(PV)	Pityriasis versicolor.
(SSSS)	Staphylococcal Scalded Skin Syndrome.
(SSTIS)	Skin and soft tissue infections.
(TB)	Tuberculosis.
(T.mentagrophytes)	Trichophyton mentagrophytes.
(T.rubrum)	Trichophyton rubrum
(T.tonsurans)	Trichophyton tonsurans.
(VZV)	Varicella zoster virus.
(WHO)	World Health Organization.

INTRODUCTION

Infectious skin diseases are very common all over the world. Several factors influence the type and prevalence of infectious skin diseases in any community. They include genetic constitution, hygiene standards, climate, customs, occupations, and quality of medical care. Thus, there is a wide variation in the pattern of skin diseases including skin infections reported from different parts of the world, even in the same country ***(Burton and Savin, 1997; Dowlati, 2005)***.

The studies concerning pattern of skin diseases are well-known in most developed countries, but lacking in developing ones. In Egypt and, generally, in Arab countries they are scanty and just few studies have been reported involving such type of research ***(Parthasaradhi and Al Gufai, 1998; Raddadi et al., 1999; Souissi et al., 2007)***.

Though community-based studies are the best to determine the incidence of a particular disease, they are difficult to carry out. As such studies are based on hospital attendance ***(Parthasaradhi and Al Gufai, 1998)***.

In hospital attendance-based studies, several points must be taken into consideration; such as, prevalent diseases may be less presented due to carelessness. On the other hand, a rare disease may be, relatively, more presented due to repeated visits. Nevertheless, they are of great importance being relatively easier, of lower cost, and more practical than community-based studies ***(Parthasaradhi and Al Gufai, 1998)***.

The importance of studying these patterns is to build healthcare strategies that cope with community requirements and actual citizens' needs ***(Dagnew and Erwin, 1991)***.

The current study was conducted in the outpatient's clinic of El-Fayoum General Hospital, which is one of the main health care providers, that serve rural and urban areas in El Fayoum Governrate to determine the prevalence of non sexually transmitted infectious skin diseases in El-Fayoum Governorate.

AIM OF THE WORK:

The aim of this work is to estimate the relative frequency, prevalence and risk factors of non- sexually transmitted skin infections among the population of El Fayoum Governorate, so that it might be a basic resource for health authorities in El Fayoum Governorate trying to search for solutions for these health problems.

Chapter I

DERMATO-EPIDEMIOLOGY

Epidemiology is derived from three Greek roots; "epi" means upon, "demos" means people, and "logia" means study. The term epidemiology was originally applied to the study of outbreaks of acute infectious diseases and was defined as the science of epidemics ***(Cassens, 1992)***.

Epidemiology nowadays refers to the study of distribution and determinants of disease frequency among human population, which should be considered a basic science in medicine and form the basis of any medical research ***(Valery, 2010)***.

In dermatology, epidemiological surveys play an important role in identification of the prevalence of different types of skin diseases including skin infections ***(Albares et al., 2011)***.

In any discussion of epidemiology it is important to define the following used terms ***(Last and Tyler, 1992)***:-

* **Prevalence:** refers to the proportion of a defined population affected by a disease at any given time.

* **Incidence:** is defined as the proportion of a population newly experiencing the disorder within a stated period of time (usually one year).

Types of epidemiologic studies:

Epidemiologic studies are classified into descriptive, analytic and experimental studies ***(Rothman and Greenland, 1998; Mortimer and Borenstein, 2006).*** In the field of dermatology we are getting use of each type according to the matching of each type with the aim of the study as follows:-

Descriptive studies: provide description of the frequency, prevalence, identify causes and plan for new health service ***(Feigin and Silva, 2010)***.

Analytic studies: such as the retrospective (case-control) studies and the prospective (cohort) studies. It identifies causal relationship or factors associated with a disease. An example is the analytic study of stress as a risk factor for Herpes Simplex ***(Willemsen et al., 2008)***.

Experimental studies: they are carefully designed to prove an association between a factor and disease outcome ***(Mehraj et al., 2008)***.

Several measurements constitute the descriptive tools in epidemiologic studies, such as ratio, proportion and rate ***(Mehraj et al., 2008)***.

Ratio: relationship between two items e.g. boys to girls, such as, ratio in Tinea Capitis is 3:1 ***(Mohrenschlager et al., 2005)***.

Proportion: relationship of one part to the whole. An example is the proportion of cutaneous bacterial infections to the whole skin diseases ***(Winkfield and Harris, 2009)***.

Rate: probability of occurrence of a particular event in a defined population during a specified period of time. Morbidity rates represent good examples ***(Winkfield and Harris, 2009)***.

-Incidence rate: number of new cases of a specific disease during a given time` interval ***(Wolters, 2005)***.

-Prevalence rate: number of current cases of a specified disease during a specified time ***(Shelleh and Hatiti, 2004)***.

-Attack rate: number of new cases of a specific disease during a specific time interval ***(Serzug et al., 2009)***.

Epidemiologic determinants of a disease:

Skin diseases are caused by harmful interaction between host, an agent and the environment ***(Brawer et al., 2009)*** **(Fig.1).**

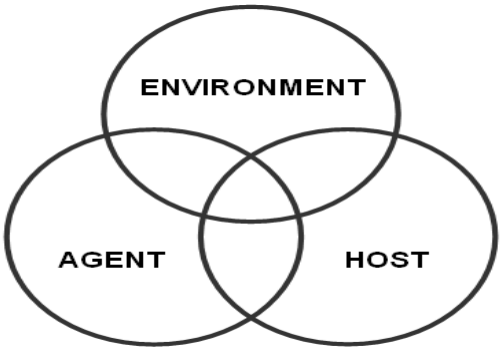

Figure (1): Epidemiologic determinants of diseases ***(Brawer et al., 2009).***

1-Agent factor:

An agent is any substance e.g. bacterial skin infections which act directly on man to cause disease ***(Farmer and Miller, 1977)***.

2-Host factors:

The occurrence of disease in man depends on his susceptibility to the agents to which he is exposed. Multiple host factors determine such susceptibility e.g. Age, sex, race, ethnic factor, general condition, immune state, sensitivity, genetic factors, and others ***(Stein, 2009)***.

- Age: The incidence of some diseases increases in a certain age group e.g. pediculosis and scabies are more prominent in children ***(Mohrenschlager et al., 2005)***.

-Sex: Some diseases are more prevalent in one sex than the other e.g. Tinea Capitis more common in boys than girls ***(Mohrenschlager et al., 2005)***.

-Race: e.g. Hispanics, Blacks, Caucasians and Whites, it controls the degree of response of the skin to some environmental factors. Marked skin differences do exist among different races, such as skin color, photo type, extensibility, elastic state, and recovery potentials. These differences influence the skin diseases pattern within different communities ***(Berardesca et al., 1991)***.

3-Environmental factors:

The environment is the physical and biological world external to the individual. It includes physical, biological and social factors ***(Bouvry et al., 2007)***.

The environment does not affect only the pattern of skin diseases, but in some skin diseases, it is the cause of the disease itself e.g. Polymorphus light eruption ***(Roosterman et al., 2006; Shibeshi, 2000)***.

-Physical factors: e.g. Climate regulates the natural flora and the parasites that can survive. Geological conditions control the spread of infective agents ***(Neer and Am, 1975; English et al., 2003)***.

-Biological factors: e.g. Nutrition plays an important role in many skin diseases, such as, foods that cause urticaria ***(Thiboutot, 2004; Wolters, 2005)***.

-Social factors: e.g. culture, occupation, economic development, and social class.

Culture**: Cultural practices influence pattern of skin diseases. Coin rubbing and cupping are all common alternative medicine practices performed in some populations; that can lead to dermatologic lesions ***(Halder and Nootheti, 2003).

Occupation**: Work-related skin diseases account for approximately 50 percent of occupational illnesses and are responsible for an estimated 25 percent of all lost workdays ***(Peate, 2002), contact dermatitis is the most common occupational skin diseases followed by ringworm and athlete's foot ***(Kuruvila, 2006)***.

Economic development**: It may be reflected in environmental sanitation, good housing, clean air, and others which are more important than the treatment in some diseases, especially infectious skin diseases ***(Van Hecke and Bugingo, 1980).

***Social class**: Within any society, those who are poorest tend to be the least healthy. The consequences of poverty such as poor standards of

nutrition, housing, medical serve and education, favor high disease rates. "Poverty-related dermatoses" is a term that points to the importance of social class as a determinant of skin diseases prevalence. In developing countries, among all diseases, infectious and parasitic diseases remain the biggest killers, and they account for one-fourth of the global burden of diseases ***(Gibbs, 1996; Ziglio et al., 2003; Hotez et al., 2004)***.

The wide spectrum of epidemiologic determinants constitute specific patterns of skin diseases, that characterize different communities.

Epidemiologic studies are carried out to explore such patterns through either community or hospital attendance-based studies. The choice of the type of the study is according to the resources available in each community. Although community-based studies are more reliable, the limited resources in developing countries force researchers to depend on hospital attendance-based studies ***(Ekramy et al., 2011)***.