Skin diseases in children are common health problems that are considered nuisance diseases. They are highly visible, produce discomfort and may lead to social burden with socioeconomic consequences. In many localities they represent the prime reason for medical attention ***(Michael and Proter, 1978)***.

There are objective reasons to suggest organized action against skin diseases would be useful. Certain disorders are extremely common in the general population and contribute to the burden of infestation and low health level, especially among children. Some disorders have a relative severity, with a definite, albeit low fatality rate in children ***(Armitage et al, 2001)***.

Knowledge of the epidemiology of the various dermatological diseases facilitates planning for health needs; however epidemiology studies which were concerned with pediatric dermatological diseases were few and difficult to compare ***(Altaian, 1991)***.

Although factors that influence on the incidence and distribution of skin diseases are genetic, race, geographical conditions, occupation, diet, habits and public health, but in most countries the prevalence of skin diseases is not known or well addressed. We do not know the precise model of prevalence of skin diseases and relation between needs, supply and demands for dermatological care. Also we do not know how much of a public health problem skin diseases are. For this reason carrying out epidemiological studies is very important ***(Donaldson, 2000)***

This study intended to get a picture about the epidemiology of dermatological diseases among primary school children in Benha city and its rural extension. This will be helpful from the prophylactic point of view, since preventive measures should be directed to the most common dermatological diseases as well as the infective group.

As Benha city and Elkalyobia governorate represent an average socioeconomic standard of Egyptian cities and governorates, so, this study can give a global view about Egyptian population.

In order to estimate the burden and relative frequency of dermatological disease in children in the Benha community 2000 students were the subject of this field work chosen by systematic random sample, the study included 903 (45.15%) boys and 1097 (54.85%) girls. They represent both urban and rural, 6 to 12 years old primary school students in Benha. A questionnaire and clinical examination were conducted for each student in the studied sample.

As regards the magnitude of the problem of skin diseases among primary school children in Benha, it was found that (75.4%) of the children in the studied sample were affected by one or more skin diseases. This result is higher than that conducted by ***Dogra and Kumar, (2003)*** who stated that the overall point prevalence of skin diseases in children in northern India was (38.8%). While similar survey study in Varanasi, India performed by ***Valia et al. (2003)*** found that the percentage was (53.6%).

Also this result is higher than that conducted by ***Popescu et al., (1999)*** who stated that prevalence of skin conditions in Romanian school children aged 6-12 years was (22.8%). The difference can be attributed to the difference in the environmental and socioeconomic levels and also to the health care services and health education orientation.

Higher results were documented by ***Figueroa et al.***, ***(1997)*** who determined that the prevalence of skin diseases in unselected pediatric population in south-west Ethiopia was (96.8%).

This study demonstrated that the higher affection by dermatological diseases occurred among females (40.9%). This result is similar to that reported by ***Wenk and Itin, (2003)*** in Switzerland but contradicted that

reported by ***Popescu et al., (1999)*** who found no significant sex differences in his epidemiological study of Romanian school children and ***Gatha et al, (1999)*** who found that in India the percentage was higher in boys (78.74%) than in girls (71.47%).

The present study also revealed that affection by skin diseases were higher among rural (49.90%) than urban children (25.50%). The higher prevalence of rural areas is probably due to bad socioeconomic conditions, dealing with animal's coops and agricultural requirements, lower education, overcrowding giving chance for spreading of infectious diseases and unclean habits of some rural society inhabitants.

Comparing the magnitude of the problem with the mentioned studies, it appears that the prevalence of dermatologic skin diseases in pediatric age group has inverse relation with the socioeconomic standard of the population.

Although skin infections have been largely controlled in Egypt through preventive and curative services of primary health care, yet it is still a problem due to existing ecological triad of host, agent and environmental factors which are responsible for the endemicity of the infectious process.

On studying the cases according to their etiology, the current study has found that parasitic infestations are the most common skin diseases (35.15%). The higher rate of parasitic infestations agrees with the general characteristics of pediatric dermatological diseases in Turkey **(*Gül et al.,2008)*** (27.5%) and with much higher percentage in Ethiopia **(*Figueroa* et al., 1997)** (81.2%). In Greece, ***Symvoulakis et al., (2006)*** showed lower prevalence of parasitic infestations (26.1%) than the current study sample.

The percentage of parasitic infestations is high due to the elevated rate of affection with pediculosis capitis (30.55%) especially among the female sample (27.05%). Similar results about pediculosis capitis obtained by ***Morsy***

et al., (2001) in Egypt (21.8%). In India much higher percentage was obtained (74.1%) by ***Sharma and Sharma, (1990)*** while ***Wu et al., (2000)*** in Taiwan (12.9%) and ***Al- Saeed et al., (2006)*** in KSA (5.2%), showed lower percentages. The differences in results reflect the difference in socio-economic status and personal hygienic measures, overcrowding of school classes and houses, lack of personal hygiene and frequent washing that helped spreading of pediculosis in the current sample.

In the current study pediculosis capitis was much more common in girls with a percentage of (27.05%) than boys (3.50%); this might be due to longer hair of girls, sharing hair accessories and scarves between sisters and relatives and using hair covers in girls as early as 6 or 7 years old as a tradition more than being religious. Our result was compatible with ***Valia et al, (1991)*** in India, ***Buczek et al., (2001)*** in Poland, ***Inanir et al., (2002)*** in Turkey and ***Nada et al., (2006)*** in Sohag governorate in Egypt.

Scabies represents (4.6%) in the current samples, similar result was recorded by ***Wisuthsarewong and Viravan, (2000)*** in Thailand (4.1%) and ***Nanda et al, (1999)*** in Kuwait (3%). while the percentages of scabies in other studies were much higher, (26.9%) by ***Morsy et al., (2001)*** in Egypt,(16.5%) by ***Odueko et al., (2001)*** in Nigeria, the difference between these results and the current study might be attributable to differences in hygienic practices, economic status or differences in social attitudes and racial factors.

Eczematous diseases come next on the list of the current study (17%) goes in the way to be the same as ***Abdel-hafez et al, (2003)*** in Assuit governorate, Egypt (19.82%)***, Gul et al, (2008)*** in Turkey (17.9%) and ***Sabyasachi et al, (2010)*** in India (22.98%), while lower percentages were recorded by ***Karthikeyan et al, (2004)*** in India (8.6%) and ***Wisuthsarewong and Viravan, (2000)*** in Thailand (6%). On the other hand ***Goh and Akarapanth, (1994***) in Singapore reported much higher percentage (50%).

Pityriasis alba was the most common eczematous disease in the current study with a percentage of (10.1%). Such finding is compatible to some extent with the results of, ***Abdel-Hafez et al., (2003)*** in Egypt (13.49%), ***Inanir et al., (2002)*** in Turkey (12%), ***Dorga and Kumar, (2003)*** In India (8.4%), higher percentage was reported by ***Tay et al.,(2002)*** in Singapore (25%). Moreover, ***Nanda et al., (1999)*** reported a lower prevalence (5.2%) in Kuwait. But the lowest percentage (1%) was recorded by ***Fung and Lo,(2000)*** in Hong Kong. Difference between the current study and the comparative ones may be attributed to differences in health and dietary habits, increased intestinal parasitic infestations and vitamin deficiencies in our community and lack of dietary programs for school children.

As regards atopic dermatitis in the current study, it represented (3.15%) of all skin diseases. This finding is in agreement with the results of ***Nanda et al., (1999)*** in Kuwait (3.4%)and ***Inanir et al., (2002)*** in Turkey (2.5%), while in Iran ***Toossi et al., (2007)*** showed a higher prevalence (5.1%). Higher prevalence were recorded in other developed countries, e.g. in United Kingdom, ***Arshad et al. (2001)*** revealed that the prevalence of atopic dermatitis among children was (19.6%); atopic dermatitis was the most frequent diagnosis (25.9%) in Switzerland in a survey performed by ***Wenk and Itin, (2001)***. Difference between percentages of atopic dermatitis in the mentioned studies may be due to the genetic and immunological differences, the variation of exposure to air and environmental pollution, exposure to agricultural pollutants and dust, humidity of weather, type of clothes and washing routines.

Seborrheic dermatitis was the third prevalent eczematous disease with a percentage of (2.6%). This result was lower than ***Tamer et al., (2008)*** in Turkey (4.3%) and ***Sardana et al., (2009)*** in India (10.49%). The difference in results may be due to the variation of seasonal affection and that the 1st

comparative study included older age (up to 16 years) and the 2nd included younger infants and preschool children.

Bacterial skin infections percentage was (4.5%) in the current study. Impetigo contagiosum represented the majority of cases with a prevalence of (3.45%). This finding agreed with, ***Ruiz-Maldonado et al., (1975)*** in Mexico (6.8%), ***Nanda et el., (1999)*** in Kuwait (3.0%) ***Wisuthsarewong and Viravan***, ***(2000)*** in Thailand (2.3%), while these results disagreed with ***Mahé et al., (1994)*** in Mali (12.3%) and ***Odueko et al., (1996)*** in Nigeria (15.7%). The higher level of these studies may be attributed to variations in socioeconomic status and seasonal variations of the disease. Overcrowding in classes and houses, sharing personal clothing and bed linen, lack of personal hygiene and health education and dealing with animals and house birds helped spreading of impetigo in the current study.

Considering superficial fungal infections; they represented (3.15%) in the current study sample. This prevalence is low as compared with the results of ***Anand and Gupta, (1998)*** in India (13.5%), ***Ogunbiyie al., (2005)*** in Nigeria (15.2%) and ***Yasmeen and Khan, (2005)*** in Karachi of Pakistan (20.6%). However the current study is compatible with ***Maldonado et al., (1977)*** in Mexico, (2.4%), ***Giam, (1988)*** in Singapore (3.3%), ***Fung and Lo, (2000)*** in Hong Kong (2.2%) and ***Toossi et al., (2007)*** in Iran **(**2.6%). This difference might be attributed to the fact that the current study was performed in winter and spring months (school period) and not in summer where fungal infections are more common.

All the previous studies revealed that tinea capitis was the most common fungal infection in children which were in agreement with our study where tinea capitis came on the top of list of fugal infections with a percentage of (2.25%). Tinea corporis represented a small percentage of the current study

(0.45%). Those results were in agreement with ***Cheng et al., (2007)*** in Taiwan (0.24%).

The current study revealed that viral skin infections represented (2.65%) of total skin diseases. This percentage is lower than ***Dogra and Kumar, (2003)*** who documented (7.9%) in India while another study was performed in India after 7 years by ***Jain et al, (2010)*** found that the percentage of viral infections in school children was (3.85%). Improvement of health care services and health education may be the reason behind the descent of viral infections rate.

Viral warts were the most common viral infection (1.2%) in the current study. Those results agreed to some extent with some studies as reported by ***Negi et al., (2001)*** in India (2.6%)and ***Inanir et al., (2002)*** in Turkey (3.8%). while higher percentages were reported by ***Popescu et al., (1999)*** in Romania (6.3%) and ***Alakloby, (2003)*** in KSA (11.90%). This difference may be attributed to the difference in the targeted population of the comparative studies and the difference in socioeconomic and heath orientation of the studied samples.

As for chicken pox, the prevalence represented (0.95***%***) in the current study. ***Melker et al., (2002)*** in Netherlands reported prevalence of (0.25%), ***Brisson and Edmunds,(2003)*** reported (0.13%) in England and Wales and ***Perez-Farinos et al., (2004)*** (0.74%) in Spain. Declining affection rate in those countries was related to the introduction of varicella zoster vaccine for school children.

Allergic skin diseases groups represented (7.55%) in the current study. Papular urticaria was the most common allergic skin disease in the current study (6.15%) and this agreed with ***Sharma et al., (1990)*** (7.5%) in India, while it is higher than ***Wisuthsarewong and Viravan, (2000)*** (2.3%) in Thailand and ***Ogunbiyi et al., (2005)*** (3.3%) in Nigeria. Difference may be

attributed to weather and health habits orientation.

In the present study hair diseases represented (3.2%) of all skin diseases. Alopecia areata was the most common hair disorder and it accounted for the majority of cases with a prevalence of (2.55%) from the total studied sample. Other studies showed similar results concerning alopecia areata such as ***Wisthsarewong and Viravan, (2000)*** in Thailand (2.4%), and ***Yang et al., (2007)*** in Taiwan (1.4%).

Other studies showed higher prevalence of alopecia areata such as ***Nanda et al., (1999)*** in Kuwait (6.7%) and ***Negi et al., (2001)*** in India (5.4%), moreover; a higher prevalence of alopecia areata was recorded by ***Sharma et al., (1996)*** (18.6%) in India and ***Xiaa et al., (2006)*** (13.3%) in China.

Traction alopecia was recorded in 13 girls (0.65%) of the studied sample. ***Khumalo et al., (2007)*** found higher prevalence in African girls (9.4%), and the difference may be attributed to the different nature of hair and hair styles between both samples.

Acne vulgaris had a percentage of (0.55%) of the studied sample. This was compatible with ***Negi et al., (2001)*** in India (0.76%), however, it is not compatible with ***Abdel-Hafez et al., (2003)*** in Assuit, Egypt **(**5.37%), ***Hon et al, (2004)*** in China (14.5%)and ***Tamer et al., (2006)*** in Turkey (12.4%) whom recorded higher prevalence as the selected studied samples involved older subjects.

Concerning pityriasis rosea, its percentage in the present study was (1.4%). The current result agreed to some extent with ***Traore et al., (2001)*** in Burkina Faso (0.6%). ***Karthikeyan et al., (2004)*** recorded lower prevalence (0.2%) in India. The absence of clear evidences of the cause of the disease makes it difficult to determine the exact cause of difference in results between

the comparative studies and the current one.

As regards residential distribution of the studied sample atopic dermatitis, seborrheic dermatitis and chicken pox were more common in urban sample of the current study, this may be attributed to the exposure of environmental and industrial pollution, while pityriasis alba, pediculosis, scabies, impetigo, tinea capitis and papular urticaria were more common in rural sample which indicates more prevalence of infectious skin diseases and allergic diseases in rural areas as a result of overcrowding, lack of health care and education and defect in personal hygiene and flaring of mosquitoes and other insects.

Distribution of the sample according to sex revealed that infections as scabies, impetigo, tinea capitis, tinea corporis, warts, chicken pox and herpes simplex were more common in boys. This may be due to the participation of boys in more activities and sports, also the exposure to infections in barber shops and sport clubs.

Some non infectious skin diseases were more prevalent also in boys in the current study as pityriasis alba, atopic dermatitis, papular urticaria, drug eruptions, alopecia areata, acne vulgaris and pityriasis rosea. The exact etiologies of these diseases are not well understood to estimate the gender difference, but sharing of the boys in more activities and exposure to more industrial products and chemicals for boys working or helping in agriculture and workshops increase their exposure to irritant and allergic products.

On the other hand, girls were much more affected with pediculosis capitis and traction alopecia. This is due to the nature of their hairs and hair styles while boys usually keep their hairs cut. Cases of pediculosis found in

boys were in boys with longer hair cuts than the usual hair length of boys in Egypt.

Bacterial infection secondary to pediculosis capitis has been recorded in (4%) of the current sample with pediculosis. This might be attributed to the itching accompanying pediculosis. This association has been recorded also by ***Buczek et al., (2001)*** in India and ***Al Saeed et al., (2006)*** in KSA while bacterial infection secondary to scabies was found in (0.65%) of scabitic cases. Studies performed by ***Harris et al., (1994)***,***Hegazy et al., (1999)*** and ***Morsy et al., (2001)*** have also showed combination between scabies and impetigo.

Atopic dermatitis complicated with secondary impetigo was found in (0.65%) of atopic children. This result agreed with the results of ***Harangi et al., (2003)*** and ***Arshad et al., (2001)***.

The difference between the various studies and ours might be explained by the difference in the number and nature of studied subjects, the climate conditions between such regions and our country as well as the difference of the health habitual status and traditions.