

Prevalence of skin disorders among male schoolchildren in Amman, Jordan

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انتشار الاضطرابات الجلدية بين التلاميذ الذكور في عمان بالأردن وحيد شقوري وعقاب عبد العزيز أبو وندي

خلاصة: تم تحديد معدل انتشار الاضطرابات الجلدية، وعلاقتها بأعمار المرضى وجنسياتهم في عمان بالأردن. فاختيرت لهذا الغرض ثماني مدارس بطريقة عشوائية بسيطة، وتم فحص عدد من التلاميذ الذكور يلسغ مجموعته 2788 تلميذاً. ووجد أن المعدل الإجمالي لانتشار الاضطرابات الجلدية كان 19.23%، حيث كانت الحالات الأكثر انتشاراً هي الوبش (36.66%) والوحامات (12.88%) وقمل الرأس (11.00%). ووجد قمل الرأس بين التلاميذ الأردنيين (11.6%) أكثر مما وجد بين غير الأردنيين (8.3%). ويجب تشجيع دوائر الصحة المدرسية على مجابهة المشكلات الصحية ذات الصلة.

ABSTRACT The prevalence of skin disorders and their relation to age and nationality in Amman, Jordan were determined. Eight schools were selected using a simple random technique and a total of 2788 male schoolchildren were examined. The overall prevalence of skin disorders was 19.23%, with leukonychia (36.66%), naevi (12.88%) and head lice (11.01%) being the most common. Head lice were found more frequently among the Jordanian (11.6%) than non-Jordanian (8.3%) schoolchildren. School health departments must be encouraged to control associated health problems.

La prévalence des affections cutanées chez les écoliers à Amman (Jordanie)

RESUME La prévalence des affections cutanées et leur relation avec l'âge et la nationalité à Amman (Jordanie) ont été déterminées. Huit écoles ont été choisies à l'aide d'une technique de randomisation simple et 2788 écoliers au total ont été examinés. La prévalence globale des affections cutanées était de 19,23%, la leukonychie (36,66%), le naevus (12,88%) et les poux de tête (11,00%) étant les affections les plus courantes. On a constaté que l'infestation par les poux de tête étaient plus fréquente chez les enfants jordaniens (11,6%) que chez les enfants d'autres nationalités (8,3%). Les services de santé scolaires doivent être encouragés à combattre les problèmes de santé qui y sont associés.

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Introduction

Skin disorders are among the most frequent diseases of schoolchildren in both developing and industrialized countries [1-5]. 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 Jordan to study the prevalence and associated risk factors of various skin problems among children. Therefore, we investigated the prevalence of some common communicable and noncommunicable skin disorders among male children and their relation to age and nationality.

Subjects and methods

A total of 2788 boys were examined for certain skin lesions; 2272 were Jordanian and 516 were non-Jordanian. From a total of 57 primary schools in Amman, 8 were selected using a simple random sampling technique. Every other child from each class was then selected for the study.

Examinations were performed by an experienced dermatologist in a designated area at each 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. A pre-coded questionnaire specifically designed for the study was used which asked for indications of normal or abnormal appearance of skin, hair and nails and occurrence or non-occurrence of the most common skin disorders. Diagnosis of tinea versicolor was made by clinical examination and in suspected cases with potassium hydroxide examination and Wood's lamp.

Table 1 Prevalence rates of skin disorders among male schoolchildren, Amman 1997

Skin disorder	No.	%
Leukonychia	1022	36.66
Naevi	359	12.88
Head lice	307	11.01
Pityriasis alba	223	8.00
Alopecia	170	6.10
Hyperhidrosis	116	4.16
Acne vulgaris	82	2.94
Warts	81	2.91
Desquamation of palms	78	2.80
Traumatic nail changes	61	2.19
Atopic eczema	59	2.12
Nail biting	45	1.61
Tinea versicolor	23	0.82
Dandruff	23	0.82
Freckles	19	0.68
Chicken pox scars	19	0.68
Nail pits	11	0.39
Hypopigmentation	11	0.39
Hypopigmented naevus of face	6	0.29
Tinea capitis	7	0.25
Periorbital hyperpigmentation	7	0.25
Paronychia	6	0.22
Longitudinal nail ridging	5	0.18
Miliaria	4	0.14
Extra finger	4	0.14
White hair	3	0.13
Oil drop	2	0.07
Scalp folliculitis	2	0.07
Molluscum	2	0.07
Preauricular lump	2	0.07
Hyperkeratosis of palms	2	0.07
Haemangioma	2	0.07
Clubbing of nails	1	0.04
Loss of half a finger	1	0.04
Leg abscess	1	0.04
Neck acanthosis nigricans	1	0.04
Keratosis pilaris	1	0.04
Scars	1	0.04

Table 2 Distribution of selected skin disorders according to nationality among male schoolchildren, Amman 1997

Skin disorder	Nationality				χ^2	P-value
	Jordanian		Non-Jordanian			
	No.	%	No.	%		
Tinea versicolor	16	0.7	7	1.4	2.19	0.139
Head lice	264	11.6	43	8.3	4.63	0.038*
Naevi	291	12.8	68	13.2	0.05	0.887
Alopecia	143	6.3	27	5.2	0.83	0.363
Acne vulgaris	60	2.6	22	4.3	3.88	0.049*
Warts	64	2.8	17	3.3	0.34	0.600
Pityriasis alba	197	8.7	26	5.0	7.54	0.006**
Eczema	48	2.1	11	2.1	0.001	0.990
Tinea capitis	3	0.1	4	0.8	-	0.020* ^a

*Fisher exact test

*Significant at 0.05 level

**Significant at 0.01 level

Statistical analysis of the data was performed using *Statgrafics* software, version 4.0. Data were checked for data entry errors using range and logical checks on all variables. Detected errors were corrected by returning to the original data forms. The prevalence of the various skin disorders by age and nationality was obtained. The relationship of nationality to a number of skin disorders was assessed for statistical significance using the χ^2 test. Relationships in the present study were considered significant if the *P*-value was < 0.05.

Results

The prevalence rates of various skin disorders diagnosed in the study sample are given in Table 1. Leukonychia, naevi and head lice had the highest prevalence rates of all skin disorders (36.66%, 12.88% and 11.01% respectively). Jordanian children had a higher frequency of head lice (11.6%)

than did non-Jordanians (8.3%) (Table 2). Age-specific prevalence rates for some common skin disorders found in the study sample are given in Table 3. The peak prevalence of head lice was at 9 years of age and seemed to decrease after 12 years of age.

Discussion

Eczema prevalence studies are scarce [6]. In this study, the prevalence of eczema was 2.1%; this agreed with studies conducted in the United States and the United Kingdom [7,8]. No cases were found among children over the age of 13 years. This supports the theory that eczema vanishes at puberty [9-12].

Although the prevalence of tinea versicolor increases with hot and humid weather, its prevalence in our study was low despite the hot and humid climate of Amman [13]. The low prevalence may be because of the young age of the study sample

Table 3 Age-specific prevalence rates (%) for selected skin disorders among male schoolchildren, Amman 1997

Age (years)	Lice	Eczema	Acne	Warts	Naevi	Pityriasis alba	Tinea versicolor	Alopecia
6	10.2	2.4	0.0	2.9	4.9	6.3	0.5	4.4
7	11.9	1.4	0.4	1.4	7.8	6.3	0.7	4.2
8	11.6	2.0	0.0	1.7	14.5	6.1	1.2	5.7
9	14.0	2.5	0.5	2.8	13.5	9.1	0.8	4.7
10	11.9	2.1	0.2	2.5	14.4	9.6	0.7	6.8
11	11.3	3.4	1.4	4.3	13.0	9.3	1.4	6.8
12	9.6	2.5	5.7	3.0	16.9	9.6	0.5	8.1
13	7.6	0.9	7.6	4.5	10.8	5.4	0.9	6.7
14	5.6	0.0	30.8	6.5	15.9	4.7	0.0	6.5

as the occurrence of tinea versicolor increases around and after puberty.

Acne vulgaris was encountered in all age groups but its peak prevalence was at age 14 years and over (2.90%). This is comparable to other studies in which prevalence varied between the ages of 11 years and 16 years, with a peak at approximately 13 years of age [9-12].

Pediculosis capitis (head lice) is most prevalent in school and preschool age groups [4]. In our study, head lice ranked third in frequency among all skin disorders (11.01%); the prevalence increased with age to a peak at 9 years of age and declined at age 14 years and over. This is in close

agreement with other studies [4,14-17]. The difference in prevalence of head lice among Jordanian children compared with non-Jordanians might be attributed to the larger size of Jordanian families and the resultant higher crowding which favours transmission of the infestation.

This prevalence study profiled the dermatological health conditions among schoolchildren. Further studies are needed to investigate epidemiological determinants and risk factors for each of the skin disorders observed and to provide tools for implementing health education programmes in schools to control these health problems.

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