

Epidemiology and Management of Common Skin Diseases in Children in Developing Countries



**World Health
Organization**

Department of Child and Adolescent Health and Development

Acknowledgements

WHO/CAH thanks Dr Antoine Mahé, MD, PhD, Libreville, Gabon, for undertaking this review, and Dr Rod J Hay, DM, FRCP, Queens University, Belfast, Northern Ireland, United Kingdom, for contributing to it.

WHO/CAH is grateful to Drs Jonathan Carapetis, Gary Darmstadt, Carolyn MacLennan, Manuel Melis de la Vega, David Osrin and Neil Prose for reviewing the draft manuscript and providing valuable comments, and to Dr Ali Hussein for editing it.

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Executive Summary

Despite the high frequency of certain skin diseases in developing countries, they have so far not been regarded as a significant health problem in the development of public health strategies. This review: 1) provides comprehensive data on the epidemiology of the commonest skin disorders in a developing country environment, 2) documents their health importance, 3) describes measures that could be used to control them, and 4) permits a rational consideration of the problem. The study was performed with a view to future integration of matters relating to skin diseases in children with IMCI programmes (Integrated Management of Childhood Illness).

Methodology

The medical literature – since 1970 – of common skin diseases in children (and adults, when judged necessary) in developing countries was extensively and critically reviewed. The diseases were mainly pyoderma, ectoparasitoses, superficial mycoses, viral disorders, and dermatitis; unpublished data were included when relevant.

Epidemiology

A total of 18 prevalence studies of the general population in developing countries (10 in sub-Saharan Africa) can be considered representative of large geographical areas; of these, 13 provided data specific to children, 17 to rural areas, and 4 to urban areas. All reported high prevalence figures for skin diseases (21-87%), the following disorders being the commonest in children: pyoderma (prevalence range 0.2-35%, 6.9-35% in sub-Saharan Africa), tinea capitis (1-19.7%), scabies (0.2-24%, 1.3-17% in sub-Saharan Africa), viral skin disorders (0.4-9%, mainly molluscum contagiosum), pediculosis capitis (0-57%), dermatitis (0-5%), and reactions due to insect bites (0-7.2%). Children present a higher prevalence rate than adults for pyoderma (especially those under 5 years), certain mycoses (tinea capitis), and, to a lesser extent, scabies. In addition, there have been reports of a particularly high prevalence of pyoderma and/or scabies in more limited settings, or in particular communities (e.g., Aboriginal communities from Pacific).

Incidence data in the general population are scarce, those that are available varying considerably from one place to another for pyoderma (e.g. 10.7% by year to 1.57 per 100 person-weeks in children), and for scabies. Data from five areas suggest that skin disorders commonly represent one of the main organ-specific reasons for visiting a primary healthcare centre, the ratio of visits due to skin problems being in the range 6-23.7% (the highest rates in children); in such centres, the main disorders appear to be pyoderma and scabies, while diseases lacking a specific diagnosis are also common. The cost of skin diseases has been estimated on few occasions only, but was found significant in the two areas where evaluated. Community-based data from three areas indicated that certain disorders (mainly scabies and pyoderma) were more likely to result in a request for treatment than other skin diseases (tinea capitis, viral disorders, pediculosis capitis).

Data from 18 available bacteriological studies suggest that group A streptococci remain the main etiological agent of pyoderma (either primary or secondary to scabies) in many tropical developing countries, followed by *Staphylococcus aureus*. The prognosis of pyoderma appears overall to be good, with a global risk for post-streptococcal glomerulonephritis estimated to be largely under 1% in many areas. Lethality related to pyoderma appears very low, except possibly in children aged less than 3 months in whom it has been reported on occasions

to be a significant source of severe bacteraemic sepsis. The severity of scabies appears to be related to superinfection, which occurs in 16-67% of cases and bears the same risks as primary pyoderma, and to epidemics whose frequency over the world appears largely underestimated. Overall, tinea capitis appears to be a benign disorder, rarely presenting with superinfection, and with spontaneous healing around puberty. The other very common skin disorders (molluscum contagiosum, pediculosis capitis) are also almost constantly benign. Where HIV infection is common, its contribution to the epidemiology of common skin diseases is unknown.

Despite the relative paucity of objective data and some methodological restrictions, it can be assumed that the main etiological factors whose role is probably significant in developing countries are a hot and humid climate (pyoderma), low hygiene and poor access to water (pyoderma), high interpersonal contact and household overcrowding (scabies and pyoderma), and certain other skin conditions like reactions to insects bites and scabies (pyoderma).

Data on management

In the case of pyoderma, with the exception of community measures based on the large use of i.m. benzathine-penicillin during post-streptococcal glomerulonephritis epidemics, there is an almost complete lack of evidence-based data for the definition of curative management regimens adapted to the bacteriology and economic constraints in tropical developing areas. With scabies, classical topical drugs should remain the first-line treatment as the efficacy of oral ivermectin has so far been insufficiently quantified. During epidemics of scabies, where community measures appear necessary, there is a lack of data on recommendations, particularly as economic constraints would not permit implementation of the measures usually recommended.

Only recently has a public health perspective for the consideration of common skin diseases been adopted. Few global public health approaches to the problem have been tested. One of the only two such trials consisted of a one-day training programme of primary healthcare workers in the basic management of the commonest skin diseases through a specific algorithm, and this gave positive results.

With regard to prevention, there are indications that improving personal hygiene by thorough use of soap associated with easy access to water can reduce the incidence of pyoderma. However, important investments (such as intensive education of the community and/or broad environmental measures) seem necessary in order to have a significant impact, and the feasibility of these interventions may be low for many populations from developing areas.

Discussion

Overall, despite the obvious frequency of skin disorders, the relative paucity of relevant data has to be underlined. Although the epidemiological picture, as described above, is probably representative of wide areas in the developing world, it should be noted that gaps in evidence about issues with potential importance are numerous. At best, attempts should be made to improve the geographic representation of data and the methodological rigor of the studies (including standardization of data recording), and to obtain more data documenting the burden of skin diseases at the primary healthcare level and in the community, especially in young children, as well as the bacteriology of pyoderma, the frequency and consequences of scabies epidemics, and the precise role of etiological factors of practical relevance.

There is a great need for standardized recommendations on the treatment of the commonest skin disorders and, eventually, on preventive measures that would take into account the epidemiological characteristics and constraints in developing areas. Public health strategies adapted to this context should be defined and validated.

Given the relative severity of pyoderma and scabies and the high demand of many populations for effective management, especially at primary healthcare level where those disorders are in general poorly managed with undue cost, the introduction of organized global measures would be useful, while the low level of severity and low lethality of most skin disorders (when compared to other health problems in the same areas) suggest the opposite. Clearly, measures should be proportionate to the level of priority of the problem, i.e. simple, practical, low cost and with significant benefit. We propose a model for decision-makers, based on the evaluation of several criteria about the importance of skin disease within the local health context, and taking in consideration the capacity for action. We suggest that improving the quality of primary healthcare for the more severe and manageable skin disorders would be a reasonable solution in many areas, which might be compatible with the IMCI programmes. As regards prevention, a few basic recommendations for personal and household hygiene may be useful targets for health promotion, although the impact of such measures is largely unknown if they are not supported by intensive education programmes and/or broad environmental measures.

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