



## Retrospective Study of Epidermal Parasitic Skin Diseases amongst Out- Patients of Skin Diseases Hospital, Maiduguri, Borno State, Nigeria

<sup>1</sup>BIU, AA; <sup>2</sup>MACHINA, IB; <sup>2</sup>NGOSHE, IY; \*<sup>1</sup>ONYICHE, ET

<sup>1</sup>Department of Veterinary Parasitology and Entomology, Faculty of Veterinary Medicine, <sup>2</sup>Department of Microbiology, Faculty of Science, University of Maiduguri, P. M. B. 1069, Maiduguri, Nigeria. \*Corresponding author E-mail Address: [onyiche@yahoo.com](mailto:onyiche@yahoo.com)  
Phone: +23408037035135

**ABSTRACT:** A ten year retrospective study (1997-2006) was undertaken to determine the prevalence of Epidermal Parasitic Skin Diseases (EPSD) among out-patients from the skin diseases hospital in Maiduguri, Borno state. Out of 10,000 out-patients examined during the study period, 3527(35.27%) were infected with EPSD. Of this number, 2819(79.9%) were infected with scabies and 708 (20.1%) with Cutaneous Larva Migrans (CLM). Retro-prevalence among age revealed 1912(67.83%) for the young and 907 (32.17%) for adults infected with scabies and 418(59.04%) and 290 (40.96%) for adults infected with CLM. Similarly, sex wise prevalence reveals that the males had 2031 (72.05%) and 501 (70.76%) for scabies and CLM scabies ( $p<0.05$ ), while females had 788 (27.95%) and 207 (29.24%) respectively for scabies and CLM ( $p<0.05$ ). Based on cumulative monthly distribution, it was most prevalent between May and September for both scabies and CLM out- patients. Adequate attention should be accorded to the risk factors such as lack of adequate sanitation, poor hygiene and overcrowding which when eliminated or reduced will reduce the burden of the disease.

DOI: <https://dx.doi.org/10.4314/jasem.v22i2.14>

**COPYRIGHT:** Copyright © 2018 Biu et al. This is an open access article distributed under the Creative Commons Attribution License (CCL), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited

**DATES:** First received 03 December 2017; Received in revised form 02 February 2018; Accepted .....2018

**Keywords:** Epidermal, Parasitic, Skin diseases, Scabies, CLM,

The skin diseases hospital in Maiduguri Borno State was first established in 1978 as a leprosy center, but was later converted to a skin diseases hospital in 1988 and provides health care services to the grass roots particularly on health care education pertaining to personal hygiene and food and nutrition and acquires its funding from non- governmental organizations (NGO's) in collaboration with the Federal Ministry of Health. A great majority of tropical diseases in one way or another are intricately linked with poverty (Traub *et al.* 2002).

Scabies refers to the various skin lesions produced by female mites, and their eggs and scybala that are deposited in the epidermis, leading to delayed-type hypersensitivity reaction (Hengge *et al.*, 2006). It remains one of the commonest of all skin diseases of all ages in many regions in resource-poor societies. Likewise, cutaneous larva migrans is caused by penetration of hookworm larvae usually from dogs or cats, into the skin of humans. It causes creeping eruption on the skin which is usually self-limited (Heukelbach *et al.*, 2004)

Both Scabies and Cutaneous larva migrans are largely common because of the highly conducive eco-climate, human and social factors (Heukelbach *et*

*al.* 2002), with a high burden particularly in developing countries and amongst resource- poor populations (Hay, *et al.* 2012). However, these epidermal parasitic skin diseases (EPSD) are rarely acknowledged as public health problems and have been widely neglected by the scientific community and health care providers, hence the study was undertaken to provide relevant data on the retro-prevalence of Epidermal Parasitic Skin Diseases (EPSD) among out-patients from the skin diseases hospital in Maiduguri, Borno state.

### MATERIALS AND METHODS

Records of out-patients documented between 1997 and 2006 (a span of ten (10) years) were reviewed with particular reference to Scabies and Cutaneous Larva Migrans. Monthly occurrence of the two epidermal parasitic skin diseases (EPDS) was taken down in relation to the age and sex of the out-patients. The data obtained were summarized in table and bar chart. Student t-test was performed to determine significant difference between variables.

### RESULTS AND DISCUSSION

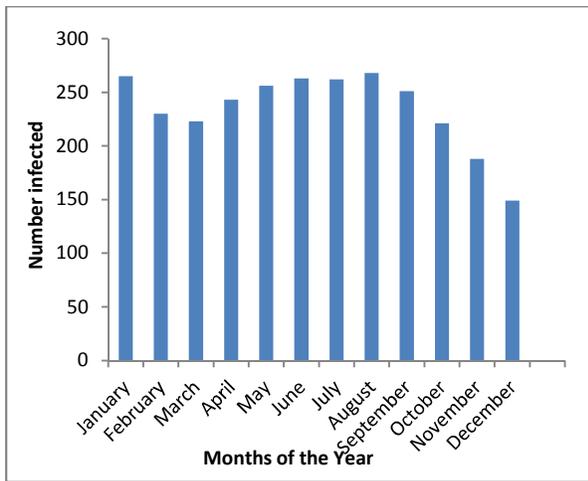
Table 1 below shows the prevalence of epidermal parasitic skin diseases based on the sex and age of out-patient examined. Out of the 10,000 out-patients

examined 3527 (35.27%) were infected with 2819 (79.9%) for scabies and 708 (20.1%) for CLM ( $p < 0.05$ ). This is similar to that reported by Schuster *et al.*, (2011). Scabies and CLM are common among impoverished rural and urban communities in

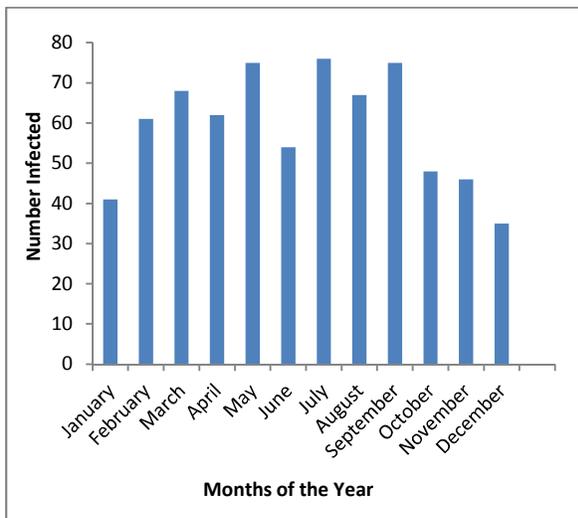
countries with hot climates and belong to the category of neglected tropical diseases (NTD) (Hengge *et al.* 2006). However, EPSD is irregular, and incidence and prevalence vary in relation to area and population.

**Table 1:** Prevalence of Epidermal Parasitic Skin Diseases based on the Sex and Age of Out-patients

Variables	Number of Patients (%)	Number of Infected patients (%)	
		Scabies	Cutaneous Larva Migrans
Age			
Young (<18yrs)	2370(67.19)	1912(67.83) <sup>a</sup>	418(59.04) <sup>a</sup>
Adult (≥18yrs)	1157(32.80)	907(32.17) <sup>b</sup>	290(40.96) <sup>b</sup>
<b>Total</b>	<b>3527(100.00)</b>	<b>2819(100.00)</b>	<b>708(100.00)</b>
Sex			
Male	2496(70.77)	2031(72.05) <sup>a</sup>	501(70.76) <sup>a</sup>
Female	1031(29.23)	788(27.95) <sup>b</sup>	207(29.24) <sup>b</sup>
<b>Total</b>	<b>3527(100.00)</b>	<b>2819(100.00)</b>	<b>708(100.00)</b>



**Fig 1:** Cumulative Monthly Distribution of Scabies amongst Out-patients in Maiduguri, Borno State (1997 – 2006).



**Fig 2:** Cumulative Monthly Distribution of Cutaneous Larva Migrans amongst Out-patients in Maiduguri, Borno State (1997 – 2006).

Prevalence of EPSD amongst age revealed 1157 (32.8%) for adults with 907 (32.17%) for scabies and 290(40.96%) for CLM ( $p < 0.05$ ) while young out-patients had 2370 (67.2%) with 1912 (67.83%) for scabies and 418 (59.04%) for CLM ( $p < 0.05$ ). Also, sex wise males had 2496 (70.8%) with 2031 (72.05%) for scabies and 501 (70.76%) for CLM ( $p < 0.05$ ) while females had 1031(29.2%) with 788(27.95%) for scabies and 207(29.24%) for CLM ( $p < 0.05$ ) (Table 1).

This agrees with Feldmeier and Heukelbach, (2009) and Hay, *et al.*, (2012) that children are the most vulnerable but differs on their findings on sex". However, factors responsible for the high burden of EPSD in resource poor communities are complex and have not been clarified, but it has been suggested that crowding, sharing of beds, frequent population movements, poor hygiene lack of access to health care, inadequate treatment, malnutrition and social attitude are contributors, and it is difficult to disentangle the relative importance of economic, environmental and behavioral factors, since they frequently coexist (Singg, 2015; Jose *et al.* 2016).

The cumulative monthly distributions of EPSD are shown in Figure 1 and 2 above for scabies and CLM respectively. Furthermore, prevalence was also significantly higher between May and September within which falls the rainy season. This agrees with Heukelbach *et al.*, (2004); Hengge *et al.*, (2006); Feldmeier and Heukelbach, (2009) that scabies and hookworm related cutaneous larva migrans (HrCLM) have seasonal variation of disease occurrence with most cases in the rainy season.

**Conclusion:** In conclusion, the burden of EPSD<sup>s</sup> are reportedly high in Maiduguri, and this could be attributed to risk factors such as lack of adequate sanitation, poor hygiene and overcrowding.

Therefore, the existence of these epidermal diseases in the study area necessitates the need for an urgent and comprehensive prevention strategy be put in place to curtail and reduce the prevalence and probable eradication from this area.

*Acknowledgements:* We thank the management of the Borno skin disease hospital for granting us access to their records.

## REFERENCES

- Feldmeier, H; Heukelbach, J (2009). Epidermal parasitic skin diseases: a neglected category of poverty associated plagues. *Bull. World Health Organ.* 87:152-159
- Hay, RJ; Steer, AC; Engelman, D; Walton, S (2012). Scabies in the developing world: its prevalence, complications and management. *Clin. Microbiol. Infect.* 18:313-323
- Hengge, UR; Curie, BJ; Jäger, G; Lupi, O; Schwartz, RA (2006). Scabies: a ubiquitous neglected skin disease: Review. *Lancet Infect. Dis.* 6: 769-79
- Heukelbach, J; Mencke, N; Feldmeier, H (2002). Cutaneous larva migrans and tungiasis: the challenge to control zoonotic ectoparasitoses associated with poverty. *Trop. Med. Int. Health,* 7:907-10.
- Heukelbach, J; Winter, B; Wilcke, T; Muehlea, M; Albrecht, S; de'Oliveira, FAS; Kerr-Pontes, LRS; Liesenfeld, O; Feldmeier, H (2004). Selective mass treatment with ivermectin to control intestinal helminthiases and parasitic skin diseases in a severely affected population. *Bull. World Health Organ.* 82(8): 563-571
- Jose, MR; Moles-Poveda, P; Tessema, D; Kedir, M; Safayo, G; Tesfasmariam, A; Reyes, F; Belinchon, I (2016). Skin problems in children under five years old at a rural hospital in southern Ethiopia. *Asian Pacific J. Trop. Biomed.* 6(7): 625-629
- Schuster, A; Lesshaft, H; Talhari, S; Guedes de Oliveira, S; Ignatious, R; Feldmeier, H (2011). Life quality impairment caused by hookworm related cutaneous larva migrans in resource poor communities in Manaus, Brazil, *Plos Negl. Trop. Dis.* 5(11): e 1355.
- Singg, S (2015). Scabies awareness and fear of scabies scale- 10. *J. Clin. Case Stu* 1(1): do I <http://dxdoi.org/10.16966/2471-4925.102>.
- Traub, RJ; Robertson, ID; Irwin, P; Mencke, N; Thompson, RCA (2002). The role of dogs in the transmission of gastrointestinal parasites in remote tea growing community in the Northeast India. *Am. J. Trop. Med. Hyg.* 67 (5): 539-45.