The spectrum of skin diseases seen in a Jamaican tertiary academic medical center

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Background: The diversity of skin diseases seen in a dermatology clinic varies with the composition of the population.

Objective: The aim was to document the spectrum of cutaneous disorders seen and the variation with sex, age, and seasons.

Methods: This was a retrospective study on new patients attending an academic dermatology clinic in Jamaica during 2018. Disease frequencies and prevalence by sex, seasons, and age group were recorded.

Results: There were 547 new patients with 329 females (60%) and 218 males (40%). The mean age was 36.8 years, ranging from 2 weeks old to 103 years old. The largest number of patients were in the third decade (20-29 years) (n = 139). More patients presented in the dry season and in spring and summer. The most common diagnoses were: seborrheic dermatitis (n = 65, 11.9%), acne (n = 56, 10.2%), and contact dermatitis (n = 38, 6.9%). The most common disease groups were dermatitis (n = 161, 29.4%), infections (n = 130, 23.8%), and inflammatory disorders (n = 129, 23.6%).

Limitations: The generalizability of our findings may be limited, and selection bias may play a role in patients choosing to attend an academic dermatology clinic.

Conclusions: Skin diseases varied with age, sex, and season with seborrheic dermatitis being most common. (JAAD Int 2021;4:59-64.)

INTRODUCTION
In a hospital-based dermatology practice, one sees a wide spectrum of skin disorders with a mixture of simple cases and more complex diagnoses requiring admission. As a result of the number of referred cases from other hospital-based specialties, there is an opportunity to see rare and unusual mucocutaneous disorders that are manifestations of diseases occurring elsewhere in the body. Patients tend to be of all age groups and both sexes.

Studies on clinic attendance and diagnoses have been done in a variety of dermatology clinics including public, private, and hospital-based. Some have been done in single ethnic groups, whereas others have been done in multiple ethnic groups, comparing the dermatologic diseases that predominate in each ethnic group. In research done in persons of African descent and non-White ethnic groups, acne, eczema/dermatitis, and dyschromia were common problems and in 1 of the studies, the use of skin-lightening agents was a concern in up to 95% of participants.1-6 Skin cancers including basal cell carcinomas, squamous cell carcinomas, and melanomas were predominant in White patients.6
Jamaica is a multiethnic society with predominantly persons of African descent. Over 93% of Jamaicans have some degree of African ancestry. According to the Jamaican Census, Jamaicans of pure African descent represent 76.3% of the population, followed by 15.1% Afro-European, 3.4% East Indian and Afro-East Indian, 3.2% Caucasian, 1.2% Chinese, and 0.8% others. These other ethnic groups include persons of Middle Eastern origin. The Jamaican climate is warm with mild variations in temperature between the traditional seasons of winter, spring, summer, and autumn; the average annual temperature is slightly cooler in winter (24°C) and warmest in summer (27°C). The rainfall pattern is bimodal and so rainy and dry seasons are identified. There are 2 rainy seasons, which extend from May to June and again from September to November, whereas the 2 dry seasons are from July to August and December to April.

The Dermatology Clinic at the University Hospital of the West Indies is a tertiary referral center that receives referrals from within the hospital and from other hospitals and private and public clinics throughout the island.

Our aims and objectives were to document the spectrum and frequencies of dermatologic diseases seen in our clinic and to study the variation of disease prevalence with age groups. We also aimed to record any variations in disease frequencies during the traditional seasons (winter, spring, summer, and autumn) and the rainy versus dry seasons.

METHODS

Ethical approval was obtained from the Mona Campus Research Ethics Committee of the University of the West Indies (Ref: ECP196, 18/19). All rules of confidentiality and anonymity were upheld.

The study was a retrospective, descriptive study conducted on all new patients attending the Dermatology Outpatient clinic at the University Hospital of the West Indies from January 1, 2018 to December 31, 2018. Demographic data, date and season of presentation, and dermatologic diagnoses were obtained from the patient files. The seasons recorded were the rainy and dry seasons as well as the traditional seasons of winter, spring, summer, and autumn.

RESULTS

Five hundred forty-seven new patients were seen during the period of study. The mean age was 36.8 years with a standard deviation of 20.5 years; ages ranged from 2 weeks (14 days) old to 103 years old. The largest number of patients was in the 20 to 29 years age group (third decade) with 139 persons presenting in that decade (Fig 1). There were 329 females (60%) and 218 males (40%).

The number of new patients who attended per month ranged from 23 to 62 with an average of 46 per month. The lowest number (n = 23) could be explained by the fact that clinics are usually closed for approximately 10 days for the holiday period in December. The majority of the patients (n = 299) presented in the dry season with the remaining 248 presenting in the rainy season. All diseases and disease categories tended to present more frequently in the dry season. In the traditional seasons, more patients presented in spring and summer (144 and 151, respectively) than in autumn and winter (135 and 117, respectively).

Many patients had multiple diagnoses; 373 patients had only 1 diagnosis, 132 had 2 diagnoses, 33...
had 3 diagnoses, 8 had 4 diagnoses, and 1 had 5 diagnoses. Therefore, there were a total of 773 diagnoses with an average of 1.4 diagnoses per patient. The most common diagnoses were: seborrheic dermatitis (n = 65, 11.9%), acne (n = 56, 10.2%), and contact dermatitis (n = 38, 6.9%). Other frequent diagnoses were: tinea (dermatophyte infection) (n = 27, 4.7%) and urticaria (n = 21, 3.8%) (Table I).

The prevalences for the 3 most common diseases, seborrheic dermatitis, acne, and contact dermatitis, in each age group showed that seborrheic dermatitis was most prevalent in the 20 to 39 year age groups (third and fourth decades), whereas acne was most prevalent in the 10 to 29 year (second and third decades) age groups; contact dermatitis was most prevalent in the 40 to 59 year (fifth and sixth decade) and the 70 to 79 year (eighth decade) age groups (Fig 2).

For all 3 diseases, the number of females exceeded the number of males. In seborrheic dermatitis, 40% (n = 26) were male and 60% (n = 39) were female. With respect to acne, 21% (n = 12) were male whereas 79% (44) were female. Patients with contact dermatitis consisted of 29% (n = 11) male and 71% (n = 27) female.

Seborrheic dermatitis had its highest frequency of presentation in winter with a sharp decrease in spring but increased again for summer and autumn. Both acne and contact dermatitis presented more frequently in summer (Fig 3).

The most common groups of diseases were dermatitis (n = 161, 29.4%), infections (n = 130, 23.8%), and inflammatory disorders (n = 129, 23.6%). Other common categories were follicular diseases and alopecia (n = 82, 15.0%) as well as benign tumors, hamartomas, and nevi (n = 47, 8.6%). In a country with mainly persons of color, it was not surprising that dyschromia (n = 34, 6.2%) was also fairly common (Table II).

Both dermatitis and inflammatory disorders were more common in females whereas infections were more common in males. For dermatitis, 40% (n = 65) were male and 60% (n = 96) female; for inflammatory disorders, 38% (n = 49) were male and 62% (n = 80) were female. On the other hand, for infections, 52% (n = 68) were male and 48% (n = 62) were female.

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**Table I. Most common diagnoses in new patients attending the clinic**

| Diagnosis                                      | Number of patients (percentage) |
|------------------------------------------------|---------------------------------|
| Seborrheic dermatitis                          | 65 (11.9%)                      |
| Acne                                           | 56 (10.2%)                      |
| Contact dermatitis                            | 38 (6.9%)                       |
| Tinea (dermatophyte infection)                 | 27 (4.7%)                       |
| Urticaria                                      | 21 (3.8%)                       |
| Pityriasis rosea                               | 18 (3.3%)                       |
| Pityriasis versicolor                          | 18 (3.3%)                       |
| Papular urticaria                              | 17 (3.1%)                       |
| Scabies                                        | 17 (3.1%)                       |
| Post-inflammatory hyperpigmentation            | 14 (2.6%)                       |
| Lichen planus                                  | 12 (2.2%)                       |
| Keloid scars                                   | 12 (2.2%)                       |
| Atopic dermatitis                              | 11 (2.0%)                       |
| Psoriasis                                      | 10 (1.8%)                       |
| Pseudofolliculitis barbae                      | 10 (1.8%)                       |
| Acne keloidalis nuchae                         | 8 (1.5%)                        |
| Nevi                                           | 8 (1.5%)                        |
Dermatitis was most prevalent in the 80 to 89 years age group (ninth decade). Infections were most prevalent in the very young and the very old with peaks in the 0 to 9 years age group (first decade) and 90 to 109 year age groups (tenth and eleventh decade of life). There was no age group in which the prevalence of inflammatory disorders was obviously elevated; however, this group of disorders was slightly decreased in the 50 to 59 years age group (sixth decade) with a marked decrease in the 80 to 89 year age groups (ninth decade) and totally absent in the 90 to 109 year age groups (tenth and eleventh decade) (Fig 4). Both dermatitis and inflammatory disorders presented more frequently in the summer, whereas skin infections presented more commonly in the spring.

**DISCUSSION**

The results showed variations of disease frequencies and prevalence with age, sex, and seasons. Some findings confirmed those in other studies, whereas some results were peculiar to our population. The fact that seborrheic dermatitis was seen even more commonly than acne and atopic eczema seems to reflect the high proportion of persons of color in our population. Seborrheic dermatitis has
been reported to have a higher incidence in African Americans and West Africans.12-16

The highest prevalence for both seborrheic dermatitis and acne were as expected with seborrheic dermatitis mainly presenting in the third and fourth decade and acne being prevalent slightly earlier in the second and third decades. It should be noted, however, that patients continued to present with acne up to and including the fifth decade (40-49 year age group). Seborrheic dermatitis has been found most commonly in men in most other studies and so our finding of a higher frequency in females may be anomalous and probably explained by our higher female clinic population.17 The occurrence of acne in more females than males in our study mirrors similar results in other studies even though the higher levels of androgens in males and their contribution to pathogenesis would lead one to expect the opposite.18

The slight preponderance of female patients (60%) versus male patients (40%) may be because of skin diseases occurring more commonly in females than in males. However, we suspect that it may reflect more health care-seeking behavior in women and because skin diseases tend to affect appearance, it may also demonstrate a higher concern for one’s appearance occurring in females. Other studies have shown a similar slight female preponderance.2,6

The increased attendance in the dry season could have resulted from factors outside the scope of this study such as decreased access to transportation and unsatisfactory conditions for travel during the (rainy) wet seasons. With regard to traditional seasons, even though there are only slight variations in temperature, the findings suggested that dermatologic conditions seem to occur, flare, or become more symptomatic during the summer (which is the warmest season), particularly for acne, dermatitis, and inflammatory disorders. Similar findings have been seen in some other studies and reviews.19,20

A major limitation of this study was that the clinic was an academic hospital-based referral center and therefore the diversity of patients seen may not reflect the actual distribution of skin conditions in the overall population. As a consequence, this may affect the generalizability of our findings. As the study was retrospective, another limitation was that other factors that were not recorded, such as social upheaval or unusual weather events, may have affected attendance at particular times.

Table II. Dermatologic disease categories and their frequencies in numbers and percentages

| Diagnosis                                                      | Number of patients (percentage) |
|---------------------------------------------------------------|---------------------------------|
| Dermatitis                                                    | 161 (29.4%)                     |
| Infections                                                    | 130 (23.8%)                     |
| Inflammatory                                                  | 129 (23.6%)                     |
| Follicular disease and alopecia                               | 82 (15.0%)                      |
| Benign tumors, hamartomas, nevi                              | 47 (8.6%)                       |
| Dyschromia                                                    | 34 (6.2%)                       |
| Nail disease (except infections)                             | 18 (3.3%)                       |
| Premalignant and malignant lesions                            | 17 (3.1%)                       |
| Venous, arterial, lymphatic disease (except dermatitis and tumors) | 12 (2.2%)                      |
| Scars                                                         | 12 (2.2%)                       |
| Adnexal disease (except tumors)                              | 4 (0.73%)                       |
| Miscellaneous (heterogenous group)                           | 33 (6.0%)                       |

Fig 4. Prevalence of dermatitis, infections, and inflammatory skin diseases in each decade of age.
Conflicts of interest
None disclosed.

REFERENCES
1. Akinboro AO, Mejiuni AD, Akinlade MO, Audu BM, Ayodele OE. Spectrum of skin diseases presented at LAUTECH Teaching Hospital, Osogbo, southwest Nigeria. Int J Dermatol. 2015; 54(4):443-450.
2. Ayanlowo O, Puddicombe O, Gold-Olufadi S. Pattern of skin diseases amongst children attending a dermatology clinic in Lagos, Nigeria. Pan Afr Med J. 2018;29:162.
3. Dlova NC, Mankahla A, Madala N, Grobler A, Tsoka-Gwegweni J, Hiff RJ. The spectrum of skin diseases in a black population in Durban, KwaZulu-Natal, South Africa. Int J Dermatol. 2015;54(3):279-285.
4. Child FJ, Fuller LC, Higgins EM, Du Vivier AW. A study of the spectrum of skin disease occurring in a black population in south-east London. Br J Dermatol. 1999;141(3):512-517.
5. Arsouze A, Fitoussi C, Cabotin PP, et al. Presenting skin disorders in black Afro-Caribbean patients: a multicentre study conducted in the Paris region. Ann Dermatol Venereol. 2008; 135(3):177-182.
6. Banner A, Dinsey M, Ezzedine K, Dadzie OE. The spectrum of skin diseases occurring in a multiethnic population in north-west London, UK: findings from a cross-sectional descriptive study. Br J Dermatol. 2017;176(2):523-525.
7. Wilks R, Younger N, Tulloch-Reid M, McFarlane S, Francis D. Jamaica health and lifestyle survey 2007-8. Accessed May 25, 2020. https://www.moh.gov.jm/wp-content/uploads/2015/05/Jamaica-Health-and-Lifestyle-Survey-2007-8.pdf
8. Jamaica Population 2020 (live). Accessed May 25, 2020. https://worldpopulationreview.com/countries/jamaica-population
9. USAID Climate Risk Profile—Jamaica. Accessed May 25, 2020. https://www.climatelinks.org/sites/default/files/asset/document/2017_USAID-CCIS_Climate-Risk-Profile-Jamaica.pdf
10. UNCTAD. Climate change impacts on coastal transport infrastructure in the Caribbean: enhancing the adaptive capacity of Small Island Developing States (SIDS), Jamaica: a case study. UNDA project 1415O. Accessed May 17, 2020. https://sidsport-climateadapt.unctad.org/wp-content/uploads/2018/07/Jamaica-Case-Study.pdf
11. Atlapedia online — Jamaica [WWW document]. Accessed May 25, 2020. https://www.atlapedia.com/online/countries/jamaica.htm
12. Elgash M, Dlova N, Ogunleye T, Taylor SC. Seborrhoeic dermatitis in skin of color: clinical considerations. J Drugs Dermatol. 2019;18(1):24-27.
13. Rodney JJ, Onwudie OE, Callender VD, Halder RM. Hair and scalp disorders in ethnic populations. J Drugs Dermatol. 2013; 12(4):420-427.
14. Silverberg NB. Scalp hyperkeratosis in children with skin of color: diagnostic and therapeutic considerations. Cuts. 2015; 95(4):199-207.
15. Alexis AF, Sergay AB, Taylor SC. Common dermatologic disorders in skin of color: a comparative practice survey. Cutis. 2007;80(5):387-394.
16. Davis SA, Narahari S, Feldman SR, Huang W, Pichardo-Geisinger RO, McMichael AJ. Top dermatologic conditions in patients of color: an analysis of nationally representative data. J Drugs Dermatol. 2012;11(4):466-473.
17. Borda LJ, Wikramanayake TC. Seborrhoeic dermatitis and dandruff: a comprehensive review. J Clin Invest Dermatol. 2015;3(2):10.13188/2373-1044.1000019.
18. Skroza N, Tolino E, Mambrin A, et al. Adult acne versus adolescent acne: a retrospective study of 1,167 patients. J Clin Aesthet Dermatol. 2018;11(1):21-25.
19. Due K. The impact of climate change on skin. DermNet NZ. Accessed May 17, 2020. https://dermnetnz.org/topics/climate-change/
20. Balato N, Ayala F, Megna M, Balato A, Patruno C. Climate change and skin. G Ital Dermatol Venereol. 2013;148(1): 135-146.